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The OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCERS AND PIPE LINE MEN

THE WEEK'S NEWS INTERPRETED

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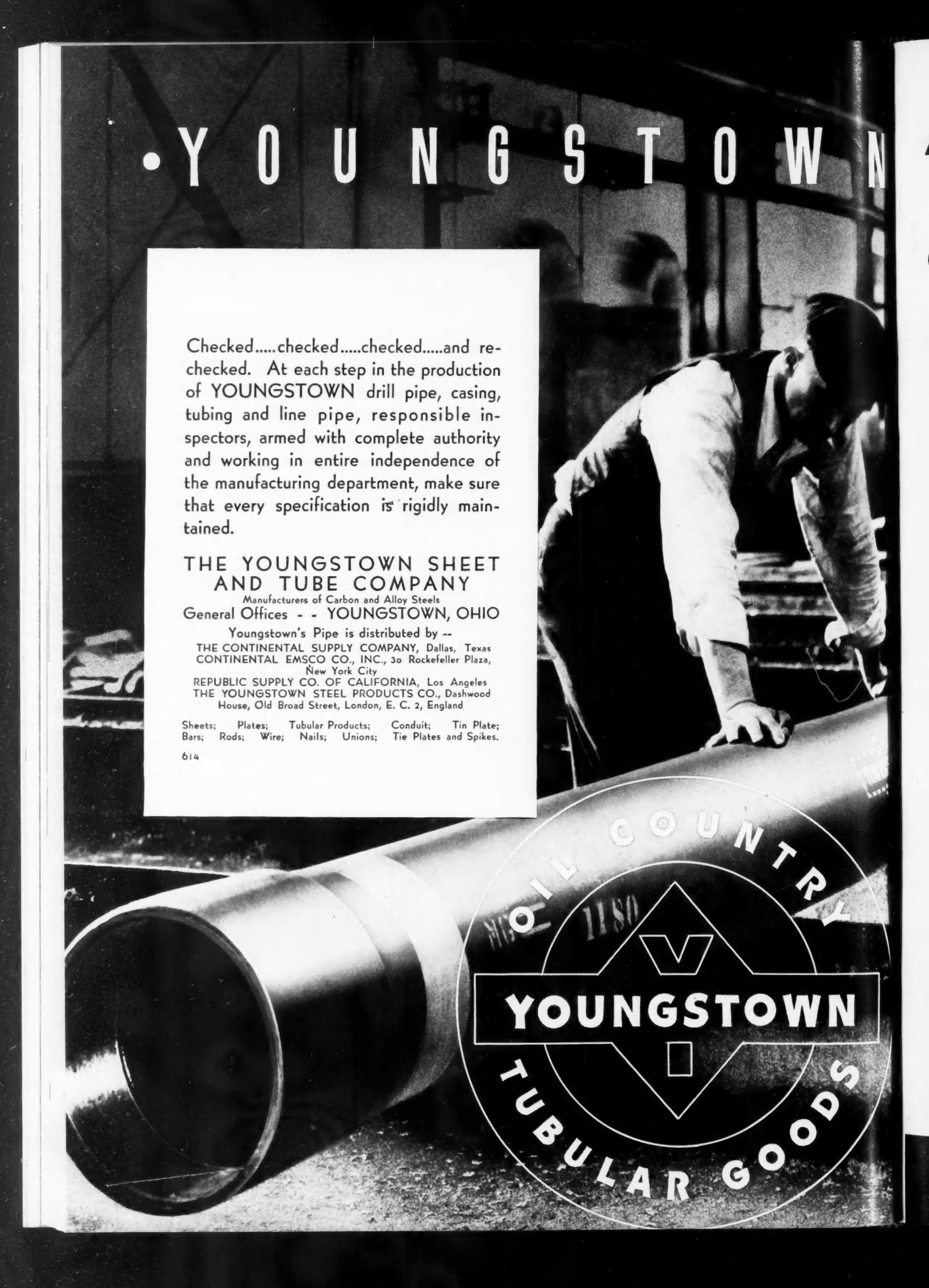
VOLUME 82 AUGUST 31, 1936 NUMBER 12



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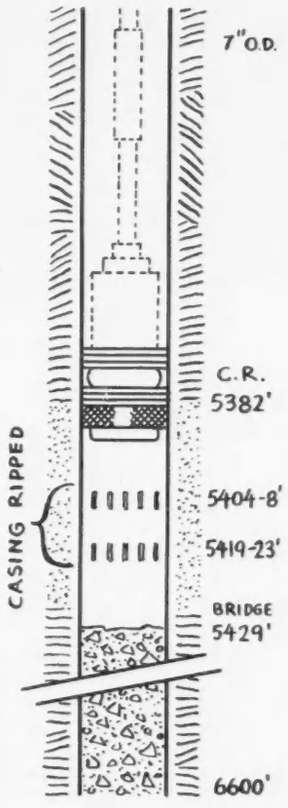

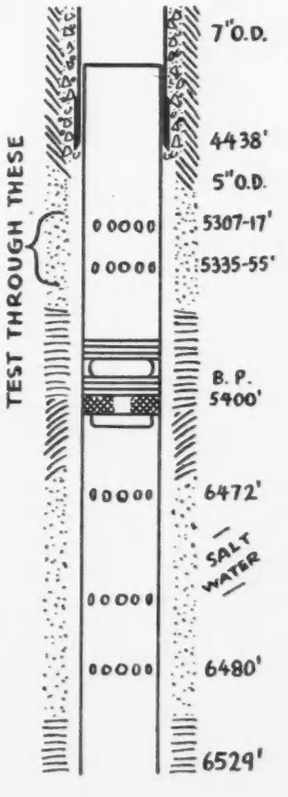

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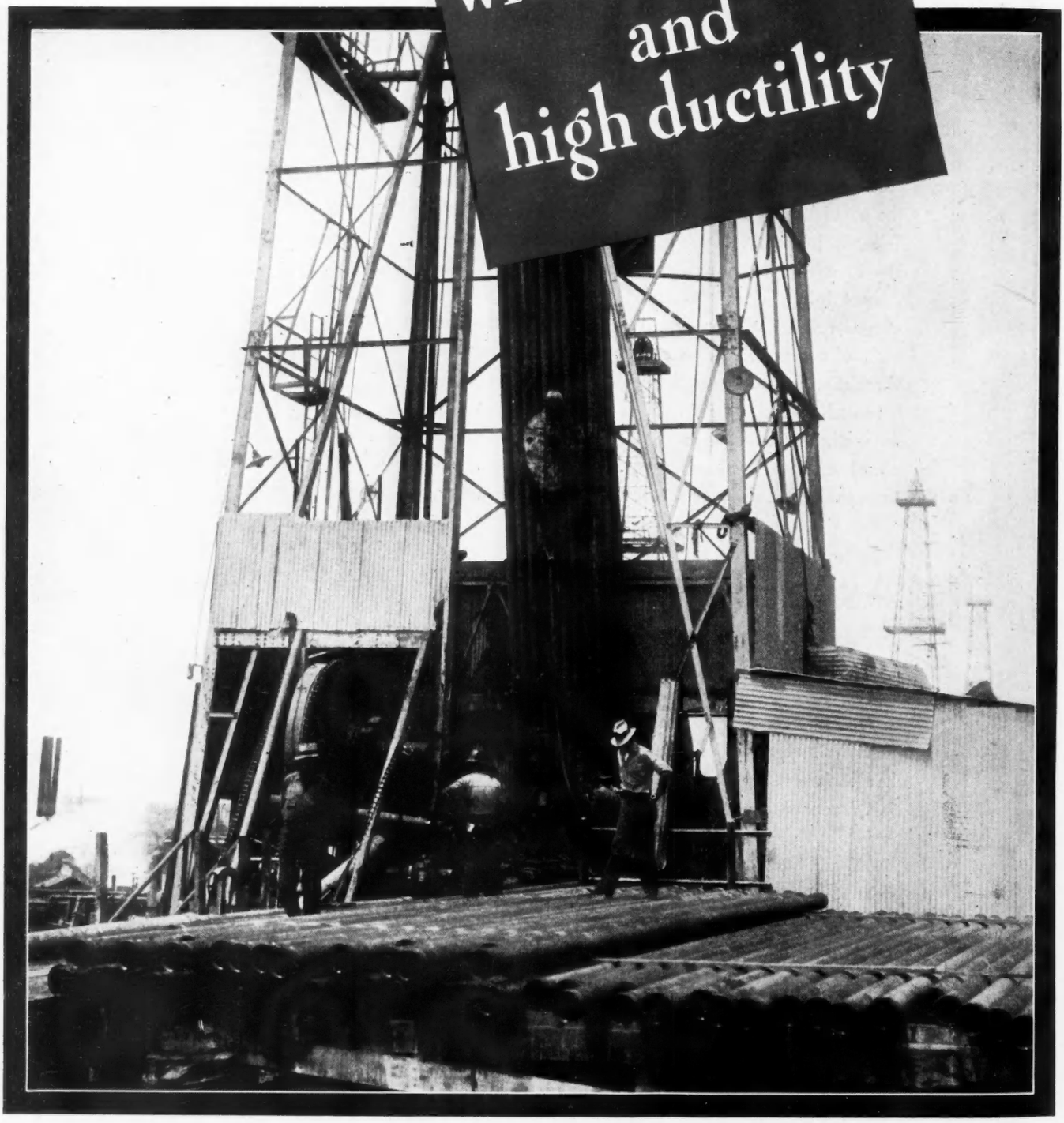

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THE OIL WEEKLY

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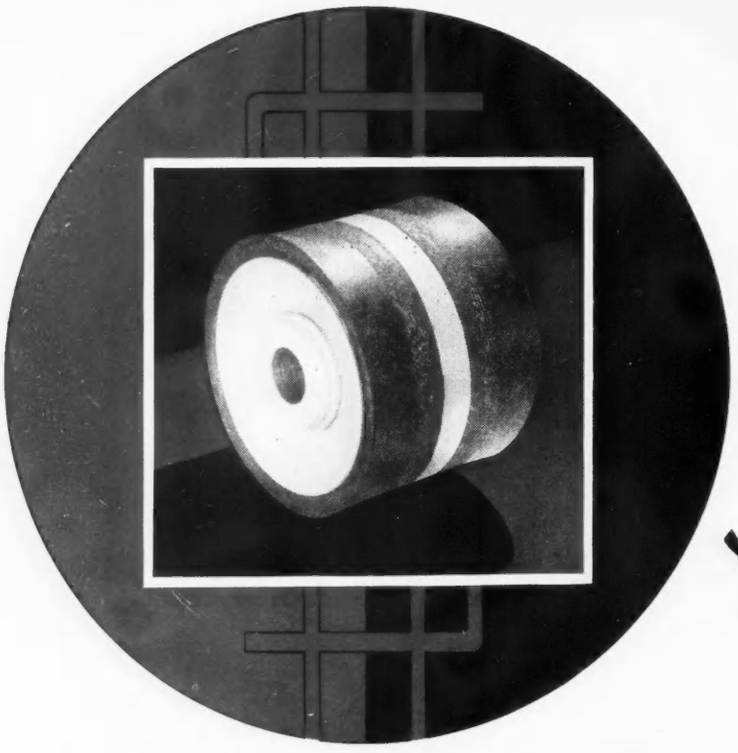

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THE OIL WEEKLY

FOR OIL AND GAS PRODUCERS
AND PIPE LINE MEN

ENGINEERING NEWS STATISTICS

WARREN L. BAKER, Editor

. . . this Week

TEXAS' September crude oil allowable has been set at 1,125,674 barrels daily by the Texas Railroad Commission. This is a reduction of 54,329 barrels, or 15 percent, and practically assures that the United States industry will have another favorable statistical month. The new state allocation is 2674 barrels more than the consumer demand estimated by the Bureau of Mines, but 4000 barrels of new market have been found since the bureau completed its study. All districts were reduced in output, except East Texas, where the allowance remains at 2.32 percent of the hourly potential. It is estimated this will mean an increase of 1837 barrels for this region because of new wells. **Page 10**

THE important and ever-present problem of well spacing in proved fields is to be considered by the Texas Railroad Commission at a statewide hearing called for September 11. It is proposed that the state adopt wider spacing regulations, and the meeting is certain to develop several controversies. The number of wells within the state has increased rapidly during the past few years, and it has been necessary to divide the limited Texas market among them. At present the per well allowable in many fields approximates the minimum allowance, and the condition will grow more serious in the future unless corrected immediately. **Page 10**

IF combined oil and water withdrawals in East Texas continue to be permitted to exceed 450,000 barrels daily, and unless the water produced is put back in the producing formation, constantly dropping bottom-hole pressures may be anticipated in the opinion of S. A. Guiberson, president of Guiberson Oil Company. In establishing the allowable of the field, water production should be considered, as it is as important to natural flow as the oil remaining in the reservoir. Guiberson suggests that every operator be required to return to the producing sand through properly selected wells a volume of water equal to the amount produced. **Page 12**

ECONOMIC collapse of the petroleum industry is inevitable unless it maintains the balance between consumption and production, is the opinion of Major George L. Berry, federal government coordinator for industrial cooperation, who has completed a study of production, wages and employment from 1914 to 1933. The study showed that this balance was upset in the period from 1919 to 1929, when the increase in the value of production far outstripped that of wages. **Page 11**

WYOMING operators are attaching great significance to present pipe line construction work in that district. A 24-mile line is to be laid from the Lance Creek field to Stanolind Pipe Line Company's system from Teapot Dome to Freeman, Missouri. This will provide an outlet for 5000 barrels daily. More important, however, is reconditioning work on the line from Teapot Dome to Freeman, Missouri, which is to be placed back in operation as an oil carrier. It will again provide the state with an outlet to eastern refiners, something it has lacked during the past several years. Thus, Wyoming is apt to regain some of its former importance in the national oil picture. **Page 11**

The Oil Man's Calendar

SEPT. 7–12	**World Power (Fuel) Conference, Washington, D. C.**
7–12	**American Chemical Society, Pittsburgh, Pennsylvania.**
16–18	**National Petroleum Association, Atlantic City, New Jersey.**
OCT. 5– 9	**National Safety Congress Petroleum Section, Atlantic City, New Jersey.**
	National Road Oil and Asphalt Congress, Tulsa, Oklahoma.
19–23	**American Institute of Mining and Metallurgical Engineers, Cleveland, Ohio.**
25–30	**American Gas Association, Atlantic City, New Jersey.**
	American Association of Petroleum Geologists, Pacific Coast Section, Los Angeles, California.
NOV. 9–12	**American Institute of Mining and Metallurgical Engineers, Western Meeting, Mexico City, Mexico.**
	American Petroleum Institute, 17th Annual Meeting, Chicago, Illinois.
NOV. 30– DEC. 1	**Independent Petroleum Association of America, Biltmore Hotel, Oklahoma City, Oklahoma.**
NOV. 30– DEC. 4	**American Society of Mechanical Engineers, Annual Meeting, Society's Building, New York.**

PANHANDLE Eastern Pipe Line Company is completely revamping its natural gas transmission system extending 1570 miles from the Texas Panhandle to Detroit so as to handle delivery to the latter city. A greater volume must be handled than before completion of the 230-mile 22-inch carrier into Detroit, and 28,000 horsepower is being added to the system. Several entirely new stations are being built, and the older ones enlarged and reconditioned. **Page 25**

GREAT progress has been made in the application of coatings to pipe line for protecting them from corrosion. During the past year the most important advancement has been perfection of means for properly applying these coatings in the field. Today, portable central field wrapping plants are being used with much success. Pipe up to 16 inches in diameter has been wrapped, demonstrating that contrary to previous beliefs this size pipe may be handled economically and effectively. **Page 21**

CATHODIC protection of pipe lines is being applied in increasing numbers, pointing to the success of this method in combating corrosion. The trend of the newer installations is to install larger generators and put in service a greater number of units on each line. **Page 30.**

Texas Allowable

IN SEPTEMBER IS REDUCED 54,329 BARRELS PER DAY

AUSTIN

THE Texas Railroad Commission issued a new statewide order last August 22, providing for an allowance of 1,125,674 barrels per day beginning on September 1.

The allowable is 54,329 barrels less than was permitted under commission orders in effect on August 15 and is 2674 barrels more than the consumer demand for Texas oil during September which the Bureau of Mines found to be 1,123,000 barrels daily. Commission Chairman Ernest O. Thompson pointed out, however, that since the Bureau of Mines calculation had been made, a new market in France and been found which will require 4000 barrels of oil daily to be delivered from Texas. This oil was formerly supplied by Venezuela, Peru and Roumania. Thus the addition of this demand means that the Texas allowable is 1326 barrels less than the total demand for Texas crude.

Flush Fields Restricted

The reduction ordered provides for a 15 percent cut in the proratable oil produced in Texas. The effect was to reduce allowables in flush fields without affecting any of the wells in the marginal fields. The commission cut the top allowable for wells in very new fields from 135 barrels daily to 125 barrels per day. This plan would apply to all new fields such as Talco, which do not have in effect a plan of proration other than a straight per well allowable.

The commission continued in effect the allowable for East Texas of 2.32 percent of the hourly potential of the individual wells. It was estimated that this would mean a total daily allowable of 434,000 barrels on September 1, an increase of 1837 barrels over the allowance in effect on August 15.

East Texas was the only district which obtained an increase; Southwest Texas with a cut of 10,732 barrels, West Texas with a reduction of 15,922 barrels, and the Gulf Coast with a loss of 18,566 barrels bore the brunt of the cut.

Commission Chairman Ernest O. Thompson explained that the reductions were made only to meet the requirements of a market which normally declines after the touring season ends on Labor Day. Several of the operators in the various fields plan to protest against the cuts ordered, and late in the week commission officials were busy hearing these complaints. The cuts by districts as compared to August 15 are set out in an accompanying table.

In West Texas North Cowden was reduced 654 barrels to 5936 barrels, and Gulf-McElroy was cut 531 barrels to 4107 barrels. Howard-Glasscock lost 1430 barrels and has an allowable of 17,477 barrels. Hendricks was reduced 1037 barrels to 12,163. Iatan-East Howard was reduced 654 barrels to 6936 barrels. Penwell was cut 550 barrels to 5778 barrels. The North Ward field was reduced 649 barrels to 6360 barrels, while South Ward dropped 877 barrels to 13,469 barrels. Yates received the largest cut of any field, losing 4308 barrels and having an allowable of 29,932 barrels.

In East Central Texas the Van field was reduced 3533 barrels. Talco, however, obtained an increase of 1388 barrels.

In Southwest Texas, Darst Creek was cut 1283 barrels to 7272 barrels. Dirks was cut 467 barrels to 4368 barrels. The Greta shallow field was reduced 1317 to 11,854 barrels. The two Government Wells fields were cut a total of 933 barrels. Sam Fordyce was cut 758 barrels to 4318, and the new deep Saxet lost 402

Study Well Spacing

TEXAS TO HOLD HEARING ON THIS IMPORTANT PROBLEM

AUSTIN.

THE Texas Railroad Commission has announced that the next statewide proration hearing will be held in Austin on September 11. The notice of hearing issued states that "the commission will at that time hear evidence and take under consideration the advisability of changing Statewide Rule 37, the same being the Statewide Spacing Rule, from 150 and 300 feet to 330 and 660 feet."

Consideration of the change proposed brings to the front an issue which is certain to develop a grave controversy.

Drilling Increases Number of Wells

Since the discovery of Tast Texas, major companies and independents holding large blocks of acreage have advocated larger spacing of wells, seeing in this program more economical operation than they have been able to obtain in the past. With the enforcement of the proration program, they found that they could produce daily the same allowable from a few wells that they could obtain from many wells, and that these few wells represented a far lower investment than they had been in the habit of making in the past.

During the past few years the increased drilling operations throughout the state have resulted in an ever increasing number of wells among which the limited market for Texas oil must be divided. At present this per well allowable in many fields, notably East Texas, approximates the minimum allowance provided under the marginal well statute.

It is evident that if the number of wells increases constantly and the market demand for Texas crude is static, individual allowances for the well will become so low that profitable operation will be impossible. The entire proration system may break down, production exceed the demand and a consequent decline in price would also result in economic disaster for the operators.

Students of the problem believe that it is possible to provide for wider spacing of wells at the present time and thus permit the continued development of fields now producing, as well as exploratory operations which will result in the discovery of new fields. They point out that with wide spacing, it is always possible to drill additional wells later should the demand for oil increase or should it be determined that the greatest ultimate recovery cannot be obtained unless the wells in a particular field are spaced close together.

While the Texas Railroad Commission may not look to the economic side of the picture in this practical sense, it does have the power under existing statutes to limit production to market demand. It is on this basis of limiting such production that they will probably be urged to provide a wider spacing rule for the entire state.

It is doubtful, however, if this question will enter into the evidence presented at the hearing. It is far more likely that engineers will be called upon to present whatever evidence they have to show that the drilling of more wells than one to 10 acres is unnecessary in most of the fields of Texas and that for this reason a general plan providing such spacing would be more advantageous to the conservation policies now prevalent than is the current regulation which results in crowded wells and expensive operation.

Texas Allowable by Fields for September

DISTRICT	Allowable August 15	Allowable September 1	Difference
Southwest Texas	166,365	155,633	—10,732
East Texas	432,163	434,000	+ 1,837
Panhandle	62,436	60,690	— 1,746
North Texas	61,286	58,780	— 2,506
West Central	56,909	54,744	— 2,158
West Texas	156,842	140,920	—15,922
East Central	51,531	46,995	— 4,536
Rodessa	7,250	7,250	.....
Gulf Coast	185,228	166,662	—18,566
Totals	1,180,003	1,125,674	—54,329

barrels and has an allowable of 4035 barrels. The Saxet-Frio area was increased 1099 barrels to 4849 barrels. Lopez was raised 513 barrels to 4075 barrels and Seven Sisters was raised 517 barrels to 6575 barrels.

In the Gulf Coast district, Anahuac was cut 660 barrels to 6890 barrels, Barbers Hill was reduced 1612 barrels to 13,088 barrels. Conroe was cut 2985 barrels to 39,768 barrels. Dickinson was reduced 605 barrels to 1870 barrels. High Island was reduced 512 barrels to 5328 barrels. Hastings was cut 683 barrels to 5717 barrels. The Manvel field was cut 875 barrels to 7625 barrels. New Mykawa was cut 443 barrels to 2722 barrels. Pierce Junction was reduced 507 barrels to 3233 barrels. Sugar Land was cut 863 barrels to 3849 barrels. Thompson was cut 804 barrels to 9333 barrels. South Houston was raised 571 barrels to 4165 barrels.

New Fields Are Listed

The commission listed for the first time in its proration order the Aransas with an allowable of 125 barrels, Mesquite with an allowable of five barrels, and Nome with an allowable of 125 barrels.

Reductions were ordered in several other fields which are not listed above, but these amounted to less than 400 barrels.

New Wyoming Line

GREAT IMPORTANCE ATTACHED TO PRESENT PIPE LINE WORK

CASPER, WYO.

AN additional market of around 5000 barrels daily for Lance Creek crude was assured last week with the announcement by Illinois Pipe Line Company of plans for laying a 40-mile line from the field into the net work of pipe lines which have an outlet to major refining centers and oil ports. The 40-mile line will join Lance Creek production to Stanolind Pipe Line Company's gravity line making trunk pipe line connections at Freeman, Missouri, from which point it will move to Standard Oil Company of Indiana's refineries at Neodosha, Kansas, Sugar Creek, Missouri, and Whiting, Indiana.

Construction bids for the laying of the 39.74 miles of line have been called by Illinois Pipe Line Company. It is expected to cost around $234,000 and will consist of 6-inch welded pipe and welded line. The link is to join with Illinois Pipe Line Company's 24-mile 6-inch pipe line from Lance Creek to Lusk, and to Fort Laramie station.

Reconditioning Outlet to East

Ample power can be supplied by the station at the Lance Creek field to move the crude through the new line without a booster station. At a point seven miles south of the field the high point from Lance Creek to Fort Laramie is situated. Powered with two 150-horsepower Diesel engines the booster station will pump the crude to Stanolind Pipe Line Company's line. The two pumps have a capacity of 350 barrels per hour each. Two tanks on location at the Fort Laramie station with a capacity of 55,000 barrels each have been reconditioned and will be used to mix the Clayton tank farm oil with the Lance Creek crude for transport through the Stanolind line. There are 12,000,000 barrels of stored crude at the Clayton, Wyoming, tank farm to be moved to the eastern refineries. When Converse County officials raised the taxes on the stored crude Stanolind Pipe Line Company decided to move it, and in the fall of 1934 served notice to Northern Utilities Company that it would not renew the latter's lease on 272 miles of the Teapot-Freeman line, which had been used to deliver gas to its consumers in eastern Wyoming and western Nebraska.

Reconditioning of the Freeman line started immediately following the completion of Northern Utilities Company line this year. Every effort is being made by officials of Stanolind Pipe Line Company, with W. G. Hetzeel, general superintendent of the company, in charge of the work to have the pipe line reconditioned and ready for usage by November 1. Completion of Illinois Pipe Line Company's 40-mile link line is expected to be completed and ready for delivery of oil by November 1.

Spending $3,000,000 on Work

Although actual construction on the 40-mile link awaits acceptance of bids, preliminary work of soil testing is underway. Stanolind Pipe Line Company brought out experienced men from its pipe line department to recondition its line, and purchased over $300,000 worth of new equipment to use in repairing. Company has construction crews along three major divisions of the pipe line and appropriated around $3,000,000 for putting this line in shape.

Significant to Wyoming oil history is the movement of the crude to the east, giving this state once more a pipe line outlet to refining centers in the east. It is believed with the development of crude in other Wyoming oil fields, such as the Sundance at Rock River, Big Medicine Bow, Quealy Dome, these and other fields will at some time tie into Stanolind Pipe Line Company's line. The market provided by the line will be in addition to the present restricted Rocky Mountain local market for the consumption of crude.

Economic Collapse

INEVITABLE UNLESS PRODUCTION AND CONSUMPTION BALANCE

WASHINGTON, D. C.

"ECONOMIC collapse" of the petroleum industry is inevitable unless it maintains the balance between consumption and production, it was predicted August 26 by Major George L. Berry, President Roosevelt's Coordinator for Industrial Cooperation, in an analysis of production, wages and employment from 1914 to 1933.

The study, covering the products of both petroleum and coal, shows that this balance between production and consumption was "upset" during the period from 1919 to 1929, when the increase in the value of production far outstripped that of wages.

Business Increasing Rapidly

"At the present time," Berry declared, "a rapidly increasing volume of business is indicated. Data as published by reliable sources show: (1) that many industries are approaching the 1929 level of production; (2) that some have attained it; and (3) that a few have exceeded it.

"On the face of it," he said, "such developments may appear wholly desirable but in the light of past experiences and present conditions a critical appraisal of this situation at this stage of our progress out of the depression may serve to hasten the return of a more permanent prosperity and prevent a continuing unbalance between consumptive power and productive power, which was a major factor in the economic collapse of 1929.

"The number of unemployed is far greater today than in 1929 and total wages are considerably less. Hence, mass purchasing power supporting the consumptive market is much further removed from the 1929 level than is production. And furthermore: there has been no large scale movement on the part of industry to recognize the necessity of maintaining a reasonable balance between consumptive ability and productive ability which must be accomplished if a recurrence of the 1929 debacle is to be prevented.

"These statistical analyses of manufacturing industry definitely show that in 1929 production forged ahead of purchasing power (wages) so rapidly that a completely unbalanced condition existed between the power to produce and the power to consume.

Wages Must Keep Abreast

"In this particular industry group from 1919 to 1929 the wage earner's productivity increased five times faster than did his average yearly wage. When this condition is repeated in a sufficient number of industries for an appreciable period of time, economic collapse is inevitable.

"When the productive and consumptive factors ar weighed with their true importance, our ability to maintain the 1929 level of production on the basis of the 1936 purchasing power, handicapped as it is by the double hazard of unemployment and lower total payrolls, may well be questioned."

East Texas Pressure

DECLINE PREDICTED UNLESS WATER PRODUCED CONSIDERED

UNLESS water taken from the Woodbine sand in the East Texas field is put back into the sand, operators in that field may expect constantly dropping pressures if combined oil and water withdrawals from the field amount to as much as 450,000, S. A. Guiberson of Dallas, president of Guiberson Oil Company, said in an interview with THE OIL WEEKLY. The Guiberson Oil Company has been a producer in the East Texas field for several years.

"Engineers figure from exhaustive tests and actual results from other Woodbine sand fields that under the normal static head of the Woodbine sand water, only a certain amount of fluid will pass through a given thickness of Woodbine formation.

Allowable Should Include Water

"In the case of the East Texas field, the bottom-hole pressure is lowered whenever the total withdrawal from the entire field exceeds approximately 450,000 barrels per day.

"It doesn't matter whether that 450,000 barrels is all oil or part oil and part water. Whenever the total production, both oil and water, exceeds 450,000 barrels, the bottom-hole pressure is bound to drop over the entire field.

"What the companies are doing now in the way of considering salt water in East Texas is not so much with a view of protecting bottom-hole pressure as it is that of disposing of 100,000 to probably 500,000 barrels per day of *salt water*. This amount of water will eventually have to be taken from that field in order to get the oil out after the pressure is gone, and there is a real problem confronting them as to what to do with this amount of water. There are plenty of surface water sands that it could be easily pumped into without any great pressure, but these water sands are the source of fresh water that cannot be poluted and for that reason the salt must be eliminated before this can be done.

Producing 75,000 Barrels of Water

"What they are doing is not in connection with the present situation. There are at the present time from 500 to 1000 wells in East Texas that are producing water. The total will probably amount to from 75,000 to 100,000 barrels per day. This, added to the oil allowable of 425,000 barrels, makes over 500,000 barrels per day total withdrawal from the field. It doesn't require a mathematician to see what is the inevitable result. The commission can keep cutting the percent on the oil potential and still bottom-hole pressure will continue to drop. There can be but one result and that will be total loss of flowing pressure unless some control of water withdrawal is put into operation. There will be an effort made before the legislature to have the minimum well allowable reduced, but even this would not remedy the situation due to the fact that the amount of water withdrawal is going to constantly increase.

BLANK AND STOLLER

S. A. GUIBERSON

He thinks volume of water produced should be considered in establishing the allowable for East Texas, and that unless the total fluid extracted is limited to 450,000 barrels daily, heavy withdrawal of water in the future will bring about lower bottom-hole pressures. Guiberson suggests that operators be required to return to the producing sand through selected wells, a volume of water equal to that withdrawn, which he thinks would result in East Texas wells flowing all their recoverable oil.

Suggests Return of Water to Sand

"An effective and fair law would be one to require every operator to return to the Woodbine sands, either daily, or weekly, an amount of water equal to that which is taken from his particular wells. If this is done, then the East Texas field, under present conservation methods of proration, can be maintained as a flowing field until the last barrel of oil has been taken out. If this is not done, no amount of pumping water back into the west side of the field can hold bottom-hole pressure where flowing conditions can be maintained. If the engineers are right, only that certain amount of fluid will pass through the Woodbine sands from the west to the east edge of the field and pumping large quantities of water into west side wells will not increase the porosity of the Woodbine sands. Only by returning water into the particular wells or into key wells located in water infested areas can the bottom-hole pressure be maintained."

NEW RICHFIELD PLAN

Reorganization proposed with new capital

LOS ANGELES

A PLAN of reorganization for Richfield Oil Company of California and Pan American Petroleum Company was filed August 20 in the United States District Court. It is believed to offer a solution for the complicated problems of these companies, which have been in receivership since early 1931. The court authorized submission of the plan to bondholders and unsecured creditors.

$26,500,000 Working Fund

The new plan provides for the formation of a larger and new concern, in which present holders of nearly $60,000,000 of bonds and claims will participate, together with Consolidated Oil Corporation, Cities Service Company, Rio Grande Oil Company and others. The plan, which has been approved by the various bondholders and creditors' committees and the above-named oil companies, will include properties of Rio Grande Oil Company as well as Richfield Oil Company and Pan American Petroleum Company holdings. It is proposed that between $15,500,000 and $20,000,000 new capital be injected into the reorganized firm. The smaller sum would provide the company with an initial net working capital of about $26,500,000, which would make it possible to acquire and develop properties. Present bondholders and unsecured creditors are to be offered the first rights to subscribe to the new securities by which additional capital is to be raised.

In accordance with the National Bankruptcy Act, the plan will not be operative unless accepted by holders of two thirds of each class of bonds or claims.

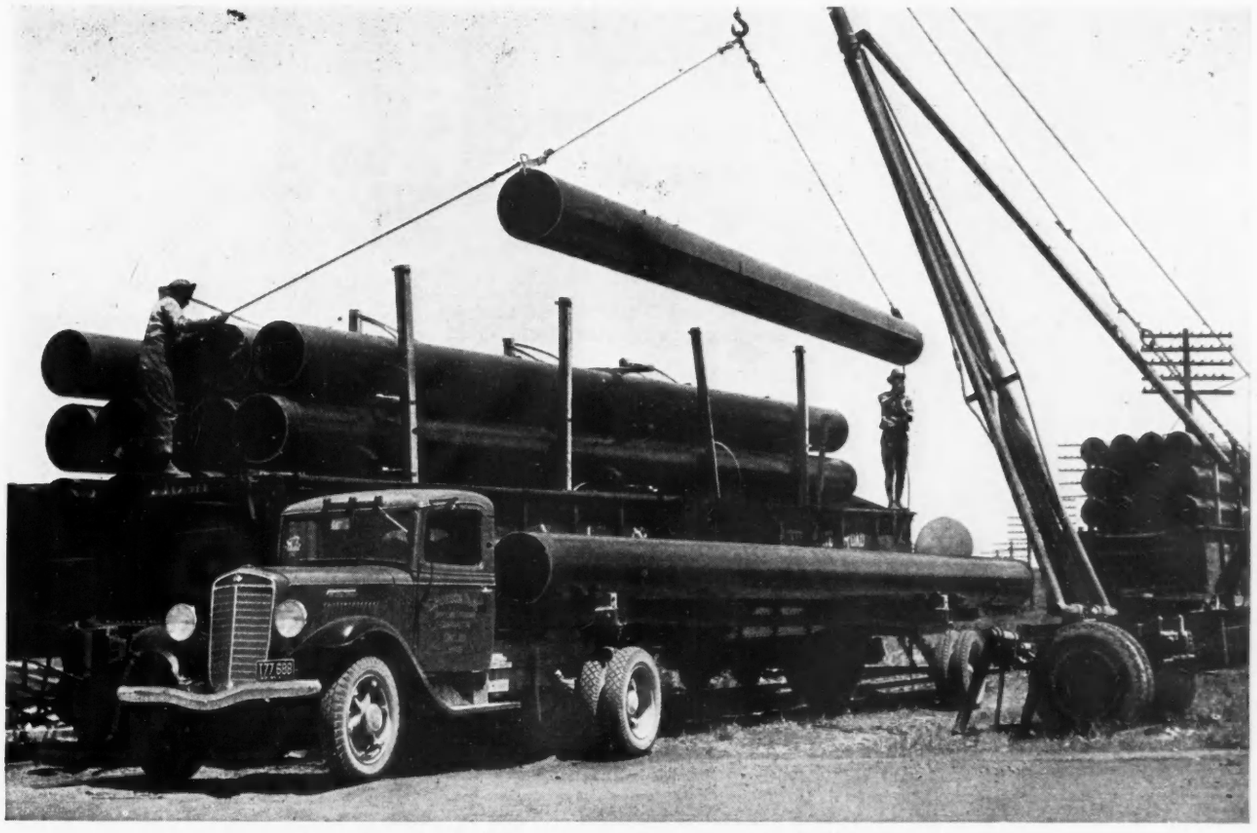
MICHIGAN'S BIGGEST

Montcalm test gauges 112 million feet of gas

MT. PLEASANT, MICH.

NEW record for open flow gas production was established with Bryan and Martin, Inc.'s Wood 1, C SE SW 3-12n-7w, Montcalm County, which gauged 112 million cubic feet from Michigan Stray sand at 1291 feet. The test was originally completed in January at 1271 feet for 29 million, but increased when deepened. It is the first well to reach 100 million in Michigan, and may be an all-eastern record.

T. F. Caldwell, Inc.'s Mutch 1, Section 17-19n-4e, Arenac County, wildcat test, after chalking Dundee lime at 2765 feet, showed oil saturation from 2895 to 2935 feet.



One of the fleet of International Trucks used by C. Hobson Dunn, Dallas, to string pipe on the natural gas line extension to Detroit.

INTERNATIONALS WILL SEE YOU THROUGH

. . . They're Built for the Toughest Work You Can Give Them

INTERNATIONAL HARVESTER has built high-grade trucks for more than 30 years. Each year has brought us new proof of this basic truth: You can't do the best job on everybody's hauling with only one or two models in your line. Internationals come in 28 models—83 wheel-base lengths—and our customers find a great many ways to use every one of them.

When you come to International Harvester you can buy *just as much truck as you need.* Our representatives will not ask you to buy *more.* Your own judgment will tell you not to buy *less.*

Some of the larger Internationals are six-wheeled giants, with dual drive and 15 forward speeds. The smallest model is a little pick-up truck that is well-known everywhere for its low-cost operation. Between these two extremes, we make the widest line of light and heavy-duty trucks, for rock-bottom economy in every class of service.

Whatever size you choose, it will bring you *International Harvester value* in fullest measure, backed by outstanding service through 230 Company-owned branches and International Truck dealers the country over. Complete information will be sent on request.

INTERNATIONAL HARVESTER COMPANY
(Incorporated)
606 S. Michigan Ave. Chicago, Illinois

INTERNATIONAL TRUCKS

Win Spacing Suit

TEXAS' RULE 37 IS UPHELD IN FEDERAL COURT

AUSTIN.

ATTORNEY GENERAL WILLIAM McCRAW has been notified that a suit brought by J. O. Whittington attacking the constitutionality of Texas Railroad Commission Rule 37 has been won by the state.

The case is of unusual importance because the decision was handed down by a three-judge federal court with Justices T. M. Kennerly, J. C. Hutcheson, Jr., and Robert J. McMillan.

The commission had ordered a well closed on the Whittington tract and had instructed the pipe line company to discontinue receiving oil therefrom. The action was taken because the commission contended that the well had been drilled in violation of the rule governing the spacing of wells known as Rule 37. The court said "The conservation laws of Texas, the right of the legislature to confer power upon the Railroad Commission to enforce them, and the authority of the commission to promulgate and enforce reasonable rules, and regulations and orders to that end, have so frequently and uniformly been upheld by both the federal and state courts that we only find it necessary to refer to several recent cases. . . ."

Whittington has indicated that he may appeal the case to the United States Supreme Court, which would bring this regulation to the attention of that court for the first time.

POWER CONFERENCE

Experts will gather next week in Washington

WASHINGTON, D. C.

PETROLEUM experts from all parts of the world will gather in Washington next week for the Third World Power Conference, which will meet September 7 to 12 for a discussion of technical, economic and social trends in all branches of the power industry.

More than a score of papers dealing with petroleum and natural gas will be submitted to the conference by American and foreign delegates, and there will be a full discussion of all phases of the petroleum industry.

Among the papers scheduled to be read during the conference are disquisitions on the "Organization of the Production, Transportation and Distribution of Natural and Manufactured Gas in the United States" by Judson C. Dickerman; "Planning for Natural Resources in America" by Stuart Chase; "The Economic Structure of the American Petroleum Industry" by Joseph E. Pogue; "Conservation of Petroleum and Natural Gas" by a representative of the Bureau of Mines; "Organization of the Production, Refining and Distribution of Petroleum and Petroleum Products" by E. DeGolyer, Noel Robinson, Robert E. Hardwicke and Myron W. Watkins, and "Organization of the Production, Transportation and Distribution of Natural and Manufactured Gas" by a representative of the American Gas Association.

Among the foreign papers to be presented will be "Evolution of the Petroleum Industry in Argentina" by Enrique P. Canepa and Mario A. Lavarello; the Hungarian Industry, by B. Speidele, the Canadian Industry by P. V. Rosewarn; Argentine Production, by Guillermo Hileman and Pascual Grosso; Polish Industry by Dr. Stanislaw Schaetzel; Germany, by Prof. Dr. A. Bentz; France, by Jules Meny of Compagnie Francaise des Petroles; Great Britain, by R. W. Hunter and Dr. G. W. Anderson; Sweden, by G. H. Hultman; and papers on conservation in Great Britain by Sir John Cadman. Coal and Oil Resources of China, by the National Geological Survey of China; and Conservation in France by Jules Meny.

RIG BUILDERS STRIKE

Operations in East Texas continue to be hindered

TYLER.

UNION rig builders have succeeded in reducing the number of active operations in the East Texas field to 70 by continuing their strike for higher wages and a closed shop. This holiday on new drilling is welcomed by nearly all large operators, but is depriving drilling crews of an opportunity to work.

Members of drilling crews are not in sympathy with the strike because they are stricken from the payroll during the period of the labor dispute, and will not be benefitted if the srikers win a wage hike.

The rig builders' strike has been only partially effective, owing to the fact that many contractors do not employ union workmen. Union leaders are attempting to halt all derrick construction by assigning "committees," comprising from 12 to 15 strikers, to canvass the field each day and invite working rig builders to join the movement.

No violence has occurred todate, according to reports. Companies prefer to postpone the drilling of projected wells rather than to defy the strikers, or attempt a compromise. However, tool men are expected to take a hand in the matter, as was the case in West Texas and New Mexico early last July when striking rig builders forced more than 1000 drillers and helpers off the payroll, and the latter caused union leaders to depart under police escort.

East Texas rig builders are seeking a $2 hike in their daily wage scale, which is now $12, with foremen receiving $14, and are demanding that contractors use only those possessing the union card. The walkout followed immediately after union leaders succeeded in obtaining a similar wage boost at Rodessa, where many companies are in the midst of carefully planned drilling programs and could not afford a tieup on field work. The situation is somewhat different in the East Texas field, where the large interests are eager for an opportunity to taper off on drilling wells that are demanded by royalty owners because of offset drainage.

POLLARD ELECTED

President Pacific Coast Gas Association

SAN FRANCISCO.

VICE PRESIDENT JAMES F. POLLARD, president of Seattle Gas Company, Seattle, was elevated to the presidency of the Pacific Coast Gas Association, at the forty-third annual convention of that body, which opened its sessions here August 25 for a four-day gathering. The convention was held at the Fairmont Hotel and an innovation was the publication of a daily newspaper carrying the title "The Gas Attack." It was published by the association.

Norman R. McKee of Los Angeles was elected vice president, and D. G. Martin of San Francisco continues to serve as treasurer. The new directors include W. J. Baily of Monrovia, C. R. Graham, H. L. Farrar of San Francisco, and R. A. Hornby of San Francisco.

The first session was opened by Hugh M. Crawford, general sales manager of Pacific Gas & Electric Company, who served the past year as president of the association. At the first afternoon session, Pollard delivered an address on "National Advertising At Last." Pollard suggested a three-year program of advertising at the Pasadena convention last year, and since that time, the program has been outlined, the money raised, and the advertising is to start in the near future, in an effort to further the use of gas and popularize it.

Practically all papers read discussed problems facing distributing gas companies, sales, accounting, advertising, etc. One afternoon session was given over to technical subjects dealing with pipe lines, effect of soils on asphalt, compressor plants, leaks in lines, etc.

OKLAHOMA TO CUT

TULSA.

OKLAHOMA oil producers August 28 agreed to prorate output to 563,000 barrels daily for September, the figure recommended by the United States Bureau of Mines. The meeting was with W. J. Armstrong, chief proration officer of the Oklahoma Corporation Commission at Oklahoma City. The figure is 12,500 barrels below that allowed by proration orders for August, when actual output was above 600,000 barrels daily for most of the period. The new figure will be placed before the commission and an order to match the figure is considered a matter of routine.

A BIG JOB

The 22-inch gas line to Detroit was a big job with many unusual difficulties encountered. Twelve "Cardwell Allsteel" Live Boom Pipe Line Units handled it in a big way.

Some Other Jobs "Cardwell Allsteel" Live Boom Units Handled in 1936

PANHANDLE EASTERN PIPE LINE CO.
Zionville, Indiana to Detroit Michigan

TEXAS EMPIRE PIPE LINE CO.
Russell to Valley Center, Kansas

STANOLIND PIPE LINE COMPANY
Reconditioning Job from Wyoming to Missouri

EMPIRE OIL COMPANY
Augusta, Kansas

AMERICAN LIBERTY PIPE LINE CO.
Conroe, Texas to Gulf Coast

SHELL OIL CO. OF CALIFORNIA
Bakersfield to Martinez, California

SOCONY VACUUM OIL CO. INC.
Augusta, Kansas to Kansas City

TEXAS EMPIRE PIPE LINE CO.
Valley Center, Kansas to Illinois

STANOLIND PIPE LINE COMPANY
Alluwe to Blake, Oklahoma

CONTINENTAL OIL COMPANY
Geneseo to Valley Center, Kansas

NORTHERN NATURAL GAS COMPANY
Hugoton, Kansas to Minneapolis

OKLAHOMA CITY EXTENSIONS.

SINTON PIPE LINE COMPANY,

REPUBLIC PIPE LINE COMPANY,
Plymouth to Corpus Christi, Texas

VALLEY PIPE LINE COMPANY
Kettleman Hills to Estero Bay, California

HUMBLE PIPE LINE COMPANY
Extensions in Texas

AMERICAN LIBERTY PIPE LINE CO.
Rusk to Conroe, Texas

KANSAS GAS AND PIPE LINE COMPANY
Otis, Kansas to Holdridge, Nebraska

UNION SULPHUR COMPANY
Gills Dome Field to Sulphur, Louisiana

Any pipe line job—large or small—can be handled easier, faster, and cheaper with "Cardwell Allsteel" Live Boom Units, available in four sizes with gasoline or Diesel "Caterpillar" tractors. . . . Our automatic release pipe tongs, welding clamps, and standard or self-ejecting dollies soon pay for themselves in time saved. We invite your inquiries, without obligation to you, for further information and prices.

CARDWELL ALLSTEEL TRADE MARK

This Trade Mark Insures Highest Quality at Lowest Price.

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CABLE ADDRESS "ALLSTEEL" PHONES L. D. 289, LOCAL 4-4381—4-4382

MEN IN THE INDUSTRY'S NEWS

FIRM OF HOUSH-SCHOFIELD-THOMPSON DRILLING COMPANY IS ORGANIZED TO CONTRACT AND DEVELOP OWN LEASES

C. N. HOUSH

C. N. NYE has accepted the position of head of the land division of the land and geological department of Sunray Oil Company. He will be assistant to Luther White, department head, and make his headquarters in Tulsa. Nye was born at Keokuk Falls, Indian Territory, in 1906. After graduating from Tulane University, he began selling producing and non-producing leases, which work he continued in until January 1, 1936, when he joined Sunray Oil Company. The position of head of the land division of the land and geological department is a new post in Sunray Oil Company, having been created due to the organization's expansion program.

H. R. FUNK, who has been Gulf Coast production superintendent for Sinclair Prairie Oil Company at Houston, will resign September 1 to enter the contracting business with H. J. DeArman.

J. W. SHRIER, superintendent for Skelly Oil Company in the Seminole and Fitts districts of Oklahoma, has been placed in charge of the company's operations at Oklahoma City and will make his headquarters in the latter city.

A. A. HUNT, who has been succeeded as Oklahoma City district superintendent for Skelly Oil Company by J. W. Shrier, has moved to Wink, Texas, to become West Texas district superintendent for the company. He succeeds J. C. Creeden, now in the company's headquarters at Tulsa as special representative.

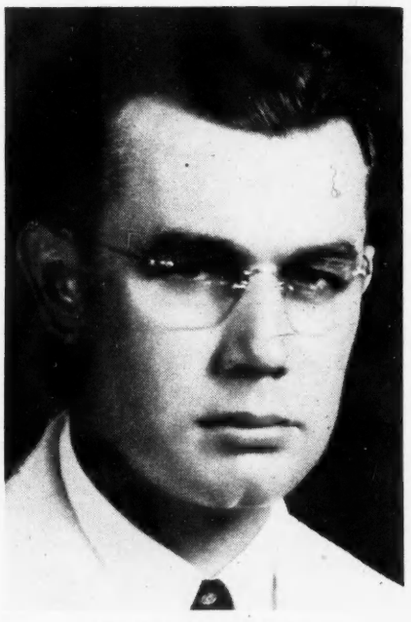
C. D. WATSON, chief production engineer for Carter Oil Company, is away from Tulsa on his vacation.

A. W. SCHOFIELD HAS LEFT GULF OIL CORPORATION TO JOIN DISCOVERERS OF TALCO FIELD

ON August 6, 1936, the firm of Housh & Thompson, Inc., which discovered the Talco field in Titus and Franklin Counties, northeastern Texas, in February, 1936, became Housh-Schofield-Thompson Drilling Company. The new member of the organization is A. W. Schofield, who resigned from Gulf Oil Corporation to join C. N. Housh and E. G. Thompson. The new company will do contract drilling work and develop its own properties at Talco and Rodessa. It has two rigs operating at Talco now. Housh is president of the company, Thompson is vice president in charge of geology, and Schofield is vice president in charge of drilling. Offices will be maintained in the Gulf Building, Houston.

C. N. Housh was born in Jackson County, Kansas, on July 20, 1897, and attended Oklahoma A. & M. College in 1915-16. After the war he went to the University of Illinois in the 1918-19 class. He obtained his A.B. degree in geology from Leland Stanford University in 1922. His first position in the petroleum industry was as a geologist for Amerada Petroleum Corporation in 1923 and 1924. He joined Gulf Production Company (now Gulf Oil Corporation) as a zone geologist at Laredo, Texas, in 1924, and continued in this capacity until 1927, when he became a geologist for the company in East Texas, Louisiana and Mississippi. In 1929, Housh was placed in charge of mapping the surface geology of eastern half of Texas. He joined the production department of Gulf Oil Corporation in 1931, and in 1932 was Gulf Coast geologist for the company. In 1934, he resigned to become president of Housh & Thompson, Inc., which position he held until the new company was organized.

A. W. SCHOFIELD

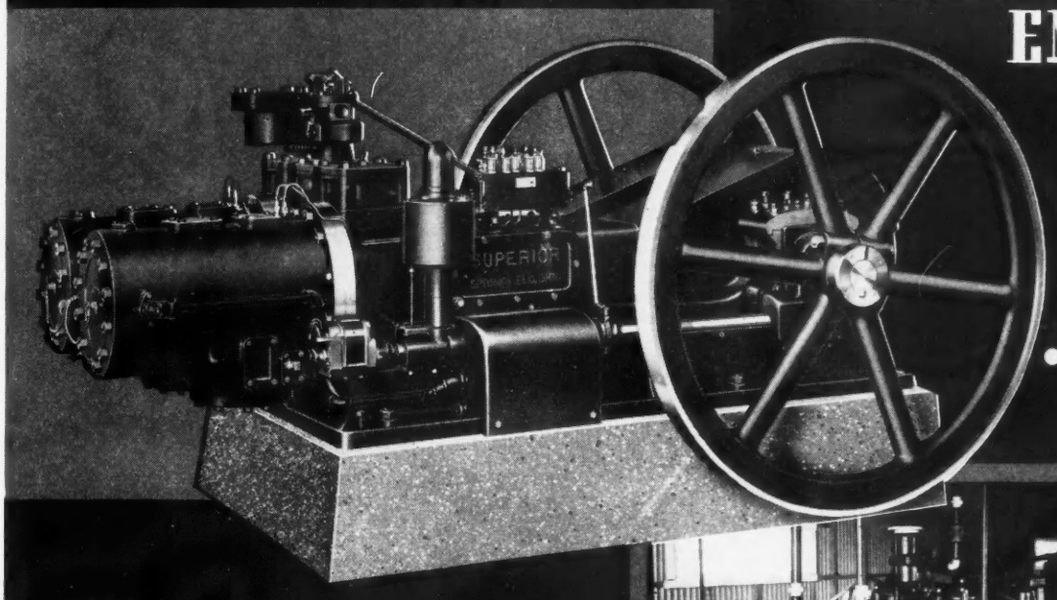


E. G. THOMPSON

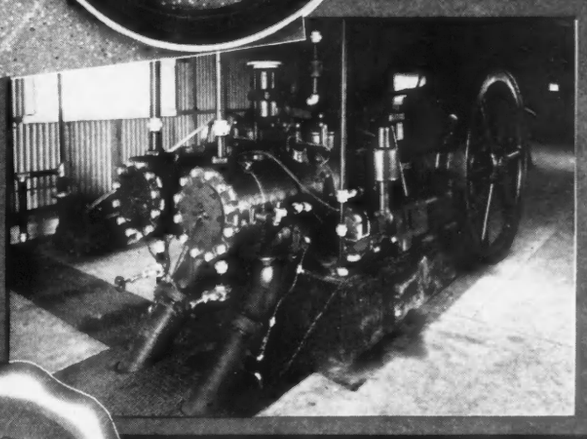
A. W. Schofield was born July 4, 1898 at San Antonio, Texas, and entered the University of Pittsburgh in the class of 1920, but joined the air service in August, 1917. He still is commissioned a captain in the air service reserve of the National Guard. He reentered the University of Pittsburgh in September, 1919, and graduated with a B.S. degree in 1922. During his time at university he worked part time in the sale accounting department of Gulf Oil Corporation, and upon graduation joined the company's drilling department and soon was in the sub-surface geological department. From September, 1923, until September, 1924, he took a post-graduate course in petroleum engineering at the University of Pittsburgh. In September, 1924, Schofield again was with Gulf Oil Corporation as driller's helper and later as a driller. From 1925 to 1930, he was assistant superintendent for the company in the Gulf Coast. District superintendent of East Texas was his position from 1930 to 1933, when he was made division superintendent of Coastal Louisiana. He continued in this position until 1935, when he became assistant general superintendent, which place he held until he resigend in July, 1936, to become associated with Housh and Thompson in the new company.

E. G. Thompson was born at Chicago on March 19, 1898. He graduated from

Superior Type BT TWIN HORIZONTAL CONVERTIBLE GAS ENGINE



● 75, 100, 120 and 160 H. P.



This two cycle gas engine is very popular for bandwheel or geared powers, compressor service, etc., because of its ruggedness, dependability, conservative speed, smooth power and low operating cost. Built for continuous heavy duty service over long periods. Simple and easily understood by operators.

Large reserve power easily takes care of changed pumping conditions.

Convertible to operate on crude oil. No carbon troubles with oil engine.

THE NATIONAL SUPPLY COMPANY

NSCO
REG. U. S. PAT. OFF.

National

the University of Wisconsin in June, 1920, after spending some time in the army. In 1920 and part of 1921 he was with Agwi Oil Company in Mexico, from which position he resigned to take post-graduate work at the University of Wisconsin. He started work with Gulf Oil Corporation February 15, 1922, doing geophysical duties. From 1924 until 1929 he was in charge of geophysic parties in Louisiana Gulf Coast, Texas Gulf Coast and East Texas. Thompson was transferred to the geological department of Gulf Oil Corporation in 1929, and did surface and subsurface work until 1933, when he was made zone geologist in East Texas. He resigned from Gulf Oil Corporation in November, 1934, to become associated with Housh in the firm of Housh & Thompson, Inc.

J. A. HALE, head of the scouting department of The Texas Company in the Mid-Continent field, left Tulsa August 24 for a vacation in Illinois.

EARL SMITH, scout for E. L. Smith Oil Company, Mexia, Texas, for the past 12 years, has resigned and moved to Dallas to become associated with Haynes B. Ownby Drilling Company, which engages in rotary contract work and also has production.

A. R. ELLIS of Pittsburgh, who entered employ of Pittsburgh Testing Laboratory as a laboratory technician after graduating from Cornell University in 1905, recently was elected president of the company. Ellis became chief engineer of the concern in 1910, manager of the New York branch in 1917, assistant general manager in 1918, general manager and director in 1921, and vice president and director in 1929.

ROBERT McCOY, sales manager, Frick-Reid Supply Corporation, Tulsa, is on a business trip that will take him through Southern Oklahoma, Dallas, Fort Worth, Houston and other Gulf points in the Gulf Coast.

H. LEYENDECKER, chief scout, Tide Water Oil Company, Houston, was in Midland, Texas, last week attending the funeral of J. B. Leonard, scout for Tide Water Oil Company.

REECE E. McGEE of Blackwell, Oklahoma, has just completed laying 200 miles of new gas line for the Kansas Pipe Line and Gas Company. All of these lines are in central and southern Nebraska along the Platte and Republican rivers. These new lines are to supply gas to various towns formerly served through the Sinclair pipe line system.

A. C. FRAMPTON, machinery sales engineer, Frick-Reid Supply Corporation, has returned to Tulsa after spending several weeks visiting the plant of Joseph Reid Gas Engine Company, Oil City, Pennsylvania, and also visiting other factories and oil fields in the East.

ERNEST OBERING, district geologist for Shell Petroleum Corporation in West Texas, with headquarters at Midland, accompanied by his wife and three children, will sail from New York early in September for The Hague, Holland, where he will spend some time in the company's general offices.

ROY L. EZZELL, who has been connected with the Mexican Gulf Oil Company at Tampico, Mexico, for the past 14 years in the executive and geological departments, has been transferred to the production department of the Gulf Oil Corporation at Houston.

W. L. (TED) JUDD, formerly supervisor of the engineering department of Air Reduction Sales Company, Inc., in the Oklahoma City district, now is associated with Mattison-Wallack and Company as superintendent of their newly organized pipe line division. Mattison-Wallack and Company are general contractors in the construction field and also are engaged in construction work at refineries and natural gasoline plants. The pipe line contracting work is an extension of their services.

JOE B. LEONARD, 48, West Texas scout for Tide Water Oil Company during the past two years, died August 23 at his residence at Midland, Texas, within a few hours after being stricken with a heart attack. He scouted for Prairie Oil & Gas Company for a number of years, with headquarters at Eastland, Texas, and enjoyed a wide acquaintance in Mid-Continent scouting circles. Funeral services were held at Midland, and the body was forwarded to Eastland for burial.

HAROLD E. BERQUIST, 39, president of the Liberty Oil & Drilling Company, Kermit, Texas, was killed instantly August 18 by a falling rig timber while supervising the dismantling of a rig on a completed well in the Eunice field, New Mexico. Funeral services were held at San Angelo August 20.

• LETTERS •

The Oil Weekly,
Houston, Texas.

I believe that I started taking the Oil Weekly with the first or second issue and have been on your list since. I now demand that you take my name from your list and do as you please with the remaining year and and a half of paid up time.

Any time an Editor steps so far out of line to take such a deliberate slap at Landon in favor of a RED of the type of Ickes, I lose interest in what they say.

You probably don't know it, but Landon was out working for Stripper oil wells in 1929. In fact he coined the term Stripper and has done more actual good for us than any individual, including Mr. Wirt Franklin.

So, STOP MY PAPER.

C. I. LAYTON.
Aug. 21, 1936.

Mr. C. I. Layton,
The Layton Oil Company,
Garnett, Kansas.

My dear Mr. Layton:

Your letter in which you take The Oil Weekly to task about publishing a news story on the radio attack made by Secretary Ickes on Governor Landon has been forwarded to me out here in California. I am sure, Mr. Layton, that a moment's reconsideration will lead to the conclusion that the publication of a news story involving statements made in an address in no wise affects the value of an oil publication to a subscriber, and that no one, be he independent or major, be he New Dealer or Anti-New Dealer would respect a publication which did not presume to give both sides of a question, even though there will be many who will agree with you that Mr. Ickes' attack was very lop-sided!

The Oil Weekly's editorial policy to date has taken into consideration only the broader aspects of the present political situation. We feel that the New Deal has so encroached on individual rights—that its trend is so definitely communistic that we have not hesitated to take a position which may be quickly interpreted as opposed to many of the New Deal ideas. It has been our idea that an individual or an institution should not hesitate to express himself or itself on matters vital to the country's welfare, and we have expressed ourselves on many occasions as being for the type of government and social order which has made America great, and as against the isms imported from Russia which we feel will, if carried out, reduce this country to the straits Russia has been reduced to. So you can see, Mr. Layton, that our publication of the Ickes story was simply the result of our desire to give the news on those who are in the oil news, rather than to develop propaganda for the New Deal. Insofar as my own feelings toward Mr. Ickes, possibly they do not belong in this letter—they have been expressed before, and they are not complimentary to the Secretary of the Interior. As to the effect of his speech, I think it will do him no good with any oil man. His ignorance of oil and logic are too well known.

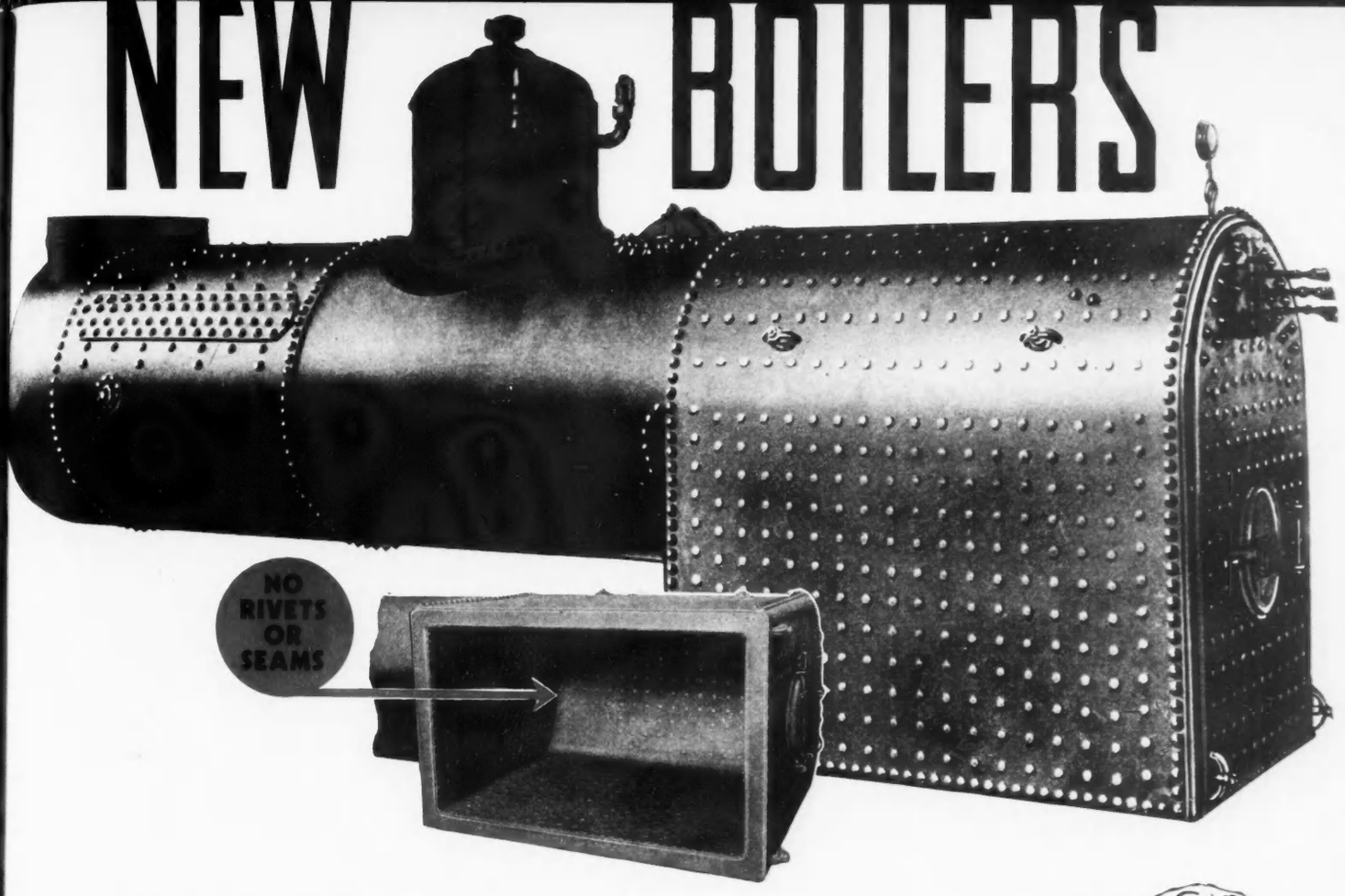
The purpose of his address apparently is to roll the Governor in oil thoroughly, to picture him as inconsistent, on the theory that any oil man will be in bad odor with the public. His quotations from Landon speeches and his conclusions therefrom are as inconsistent as the government he represents—a government that forces something down an industry's throat at the very moment it is slyly laying its snares to throttle the industry for doing the very thing it has demanded of it.

In conclusion, Mr. Layton, down in Houston where I live, all of our daily newspapers are whooping it up for the New Deal—although occasionally some of Mr. Jesse Jones' papers cannot stomach everything which the New Dealers are doing and saying and shy away as though the order is somewhat oppressive, but I keep right on taking these newspapers, and reading them, even though I do not agree with them politically. They have their rights of free speech—and I have mine; and although I am sometimes surprised to find friends of mine on the other side of the political fence, I do not fall out with old friends because I dislike what they sometimes say, and am bitterly opposed to the cause they have espoused.

Hoping you are the same, I am,

Sincerely, R. L. DUDLEY,
Publisher The Oil Weekly.

NEW BOILERS



GREATER EFFICIENCY
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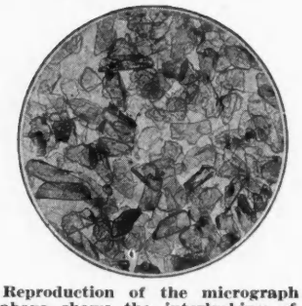

Reproduction of the micrograph above shows the interlocking of the flakes of the internal reinforcement used by Barrett. By laminating with the waterproofing agent they give Barrett Pipe Line Enamels unusual toughness and resistance to soil stresses. For pipe of large diameter, The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

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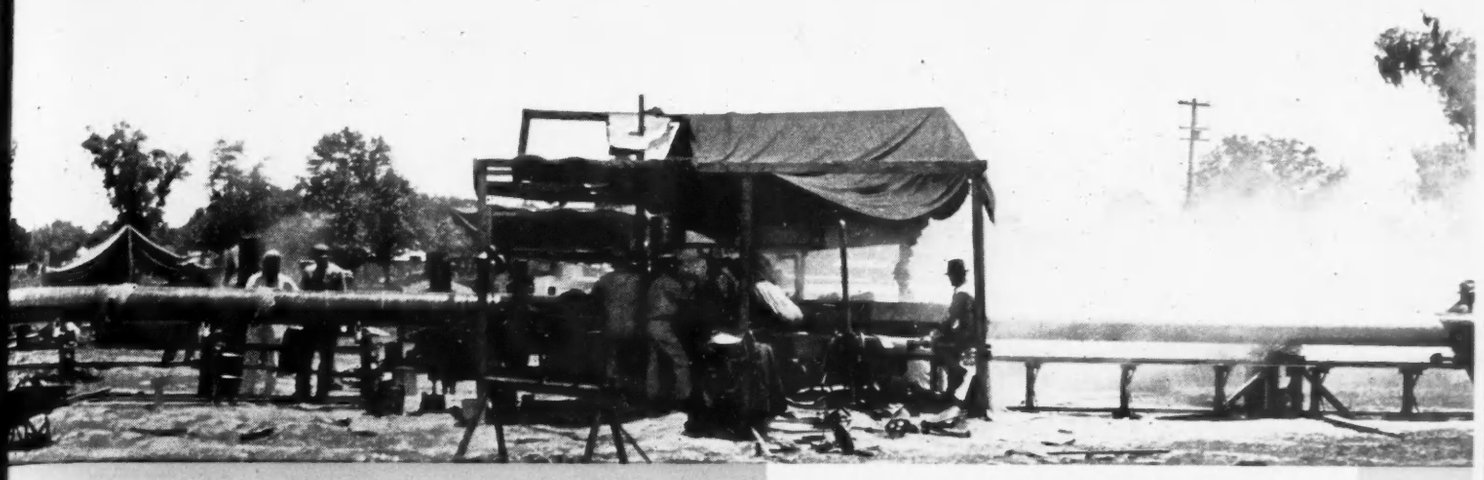


General view of coating operations. Note primed joint moving into machine, one being coated and wrapped, and finished joint being taken off.

A NEW DEVELOPMENT IN

Field Coating of Pipe

IS THE CENTRAL PLANT

By H. BOYD MAYES, President,
Mayes Brothers, Inc., Houston, Texas

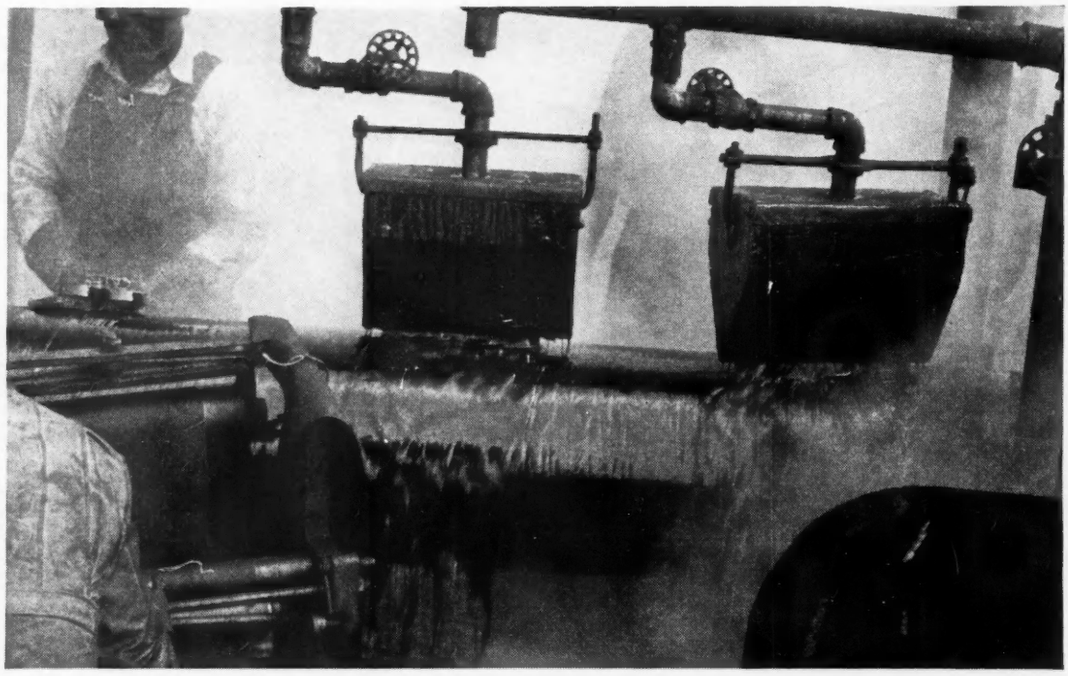
MANY pipe line engineering developments both in equipment and methods, have been made in the past five or six years. These developments have changed operating policies and programs to an appreciable extent, each and every one adding their bit to obtain a more complete and permanent installation. None of the fundamentals of pipe-laying operations has made more progress than the essential one of providing adequate protection of underground pipe investment. The majority of all oil or gas company investments in underground pipe lines need adequate protection.

In connection with adequate protection of underground pipe line investment, many tests and experiments have been made in attempts to determine the most satisfactory type of coatings and wrappers to use in various soils. Accurate information has been published on this subject, and the majority of pipe line companies have practically definitely decided on the type and kind of protection that best serves their purpose. To say the least, pipe line companies are not experimenting with coatings to the same degree they were several years ago. It is true that the companies are not of one accord on the various manufactured coatings, but they seem to agree on the point that properly applied hot coatings that are high in dielectric strength and supported with a permanent wrapper for structural and radial support offers the most positive protection for the money expended. The advent of cathodic protection has done no little to support this selection of coating procedure and to justify the additional cost of this type of protection over some of the more simple coatings that were in common usage six or seven years ago.

Field Application of Coatings

It has been known for years that the factor weakening the effectiveness of coatings and wrappers has been the lack of skill and efficiency in the application of the selected coatings and wrappers as applied in the field. The introduction of "holiday detectors" was definite proof of this shortcoming. The weather and operating conditions have always added their part to this inefficiency. The wastage of coatings and accidents caused by burns have added to the expense of the method. However, the field method was used practically altogether until the introduction of stationary cleaning, coating and wrapping equipment that was portable enough to carry to some site adjacent to laying operations.

Several lines have been coated by these portable central plants within the past two years. These lines were mostly oil lines, whose diameter did not exceed 10 inches. Recently, a 26-mile, 16-inch seamless gas line was coated for United Gas Company in southeastern Louisiana with satisfactory results. Heretofore, this larger size pipe has been considered outside the limit of pipe sizes that could be handled economically



Two coats of enamel being applied by flooding. Wrapper follows immediately after second coat.

and effectively without injury to the coating and at no additional stringing and laying cost. The recently completed 16-inch line gives an example of the scope of work and a complete description of this project will be discussed in this article.

Experience with this large diameter pipe seems to definitely reflect the fact that sizes up to and including 24-inch can be handled as satisfactorily as the smaller diameter pipe has been in the past.

Coating 16-Inch Gas Line

In selecting the coating site for United Gas Company's new 16-inch gas line, which loops an old system from Baton Rouge to New Orleans, several matters were taken into consideration; namely, the relationship of the site to the line with regards to distance of haul, accessibility to roads running near the entire right-of-way, accessibility to shipping points that controlled the delivery of coating materials and pipe, and the size of the coating site. On larger pipe a bigger site must be selected than on smaller pipe.

This 16-inch line was coated at two central sites, 16 miles being coated and wrapped at Gonzales, Louisiana, and 10 miles at La Place, Louisiana. The entire 26 miles of pipe were released for shipment from the mills immediately upon award of the contract. This made it necessary to provide sufficient rack room to take care of the entire shipment of 40-foot length pipe.

This pipe was mill primed. A good heavy priming coat was applied on the clean new pipe and was allowed to dry thoroughly before being loaded into cars. The pipe reached its destination with the primer in good condition, and only a small amount of coal dust had accumulated while in transit. This coal dust was easily removed.

Upon arrival, the pipe was unloaded onto the priming racks, where it was scraped clean of all accumulated foreign matter. It was wire brushed and broomed. After this cleaning operation, it was given a second priming coat by the spray gun method. When this second priming coat became thoroughly dry the pipe was run through the coating and wrapping machine.

The 16-inch pipe was fed into the wrapping machine by a series of tables and rubber rollers. Approximately three joints of pipe being in the machine at all times; one joint of primed pipe entering to be coated and wrapped, the middle joint being coated and wrapped and the last joint of finished pipe being removed ready for stringing and laying.

The machine applied two coats of 200° melting point coal tar enamel at 420°F. by a flooding method. Approximately 20 times more enamel is pumped upon the pipe than necessary to procure a 3/32 inch thickness of bitumen, which was the average thickness obtained by this method. This excessive enamel heated the pipe to such a point that perfect adhesion was secured and eliminated possibility of "holidays." The surplus enamel flowed back into the machine pot and was circulated again by the pumps, which were submerged in the coating material.

The two coats were applied to the pipe by overhead outlets located 16 inches apart, assuring a greater thickness of coating and a better adhesion of the coating to the pipe. Just after the pipe passed through the second flow of enamel, the wrapper was spirally applied while the bitumen was still molten, thereby making a tight-bonded wrapper. The excess bitumen under the wrapper was squeezed out in a small bead at the lap of the felt which seals the lap and cements the finishing 60-pound kraft paper onto the pipe and coating. All wrappers were applied with a one-inch overlap. The finished pipe presented a neat and homogeneous mass of wrappers and bitumen free from "holidays" or voids.

While the pipe was being coated and wrapped as it moved through the machine, it was coupled together with patented expanding couplings, that unlocked themselves on the tables that carry the finished pipe out of the machines. After the pipe had been coated and wrapped, it was lifted off onto padded skids and a "cooling board," which was constructed of

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wide, well-padded boards that would hold approximately 20 joints of finished pipe. The pipe was allowed to stay on these boards for approximately 30 minutes before being moved. This was ample time for the excessive heat to leave the pipe and coating, so that it could be rolled onto and across the finished pipe rack without injury or abrasion to the coating and wrapping.

United Gas Company's 16-inch gas line was electric welded. Therefore, 12 inches were left bare on both ends of each joint. This was ample room for welding them together. The coating was not burned in any way from the heat generated by the welding operation. The pipe was then primed over the entire length of each joint.

The pipe was loaded onto the stringing trucks from the finished pipe rack. Four 40-foot joints of pipe were hauled on each truck. No extra precautions were taken to protect the coating while on the trucks other than the bolsters were padded with old automobile tires. The finished pipe rack was approximately 400 feet long which gave ample room to hold one full day's run of pipe. It was found advisable to permit the large diameter pipe to lay on the finished rack all night after being coated. This allows the generated heat to definitely leave the pipe and the protective materials to become stronger, thereby being less subject to damage while being handled.

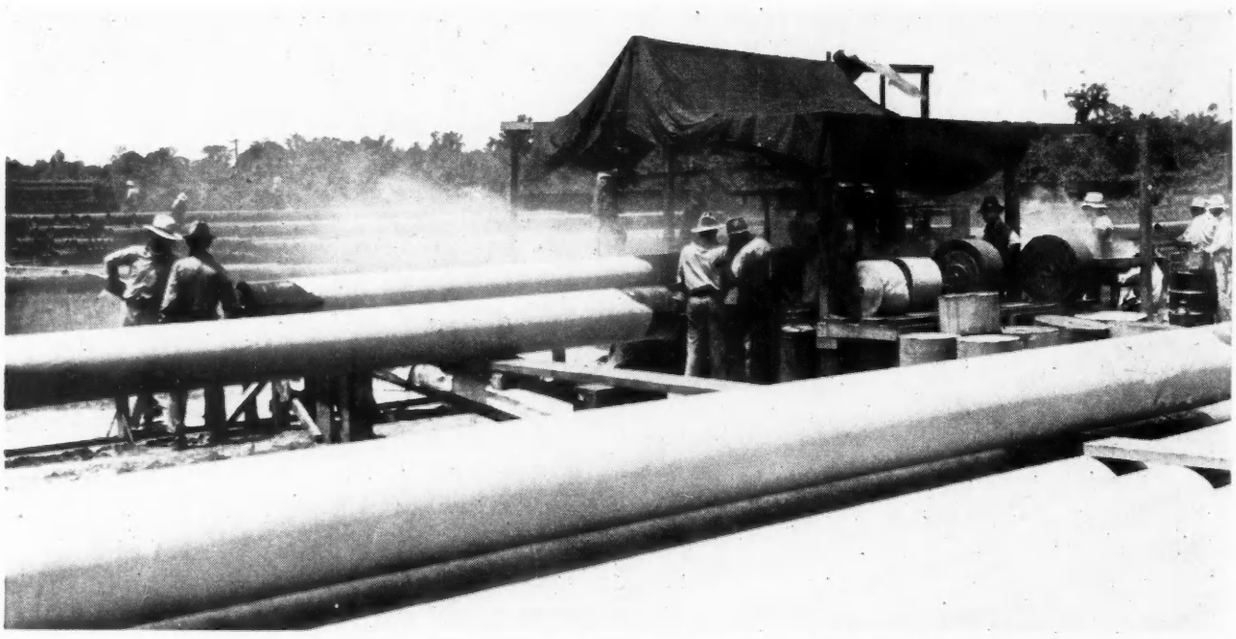
While the coated and wrapped pipe was on the finishing rack, the gas company inspectors ran a "holiday detector" over the pipe, but were not able to find a single void. Inspection of the line after the finished pipe had been strung over a very rough right-of-way, consisting of sugar cane rows, etc., showed an average of one "holiday" per 1600 linear feet of pipe. This one "holiday" was caused by the handling of the pipe, which consisted of stringing, skidding up, lining up and welding. These defects were patched by the crew that was "doping" the joints in the field. Due to this small percentage of "holidays" caused by handling, the cost of repair was negligible.

The output of finished 16-inch pipe averaged 6000 linear feet per day. This was accomplished by a crew of 48 men. Capacity of the plant can be stepped up to 8000 or 10,000 feet daily by the addition of a few more men and changes of speed gears on the machine.

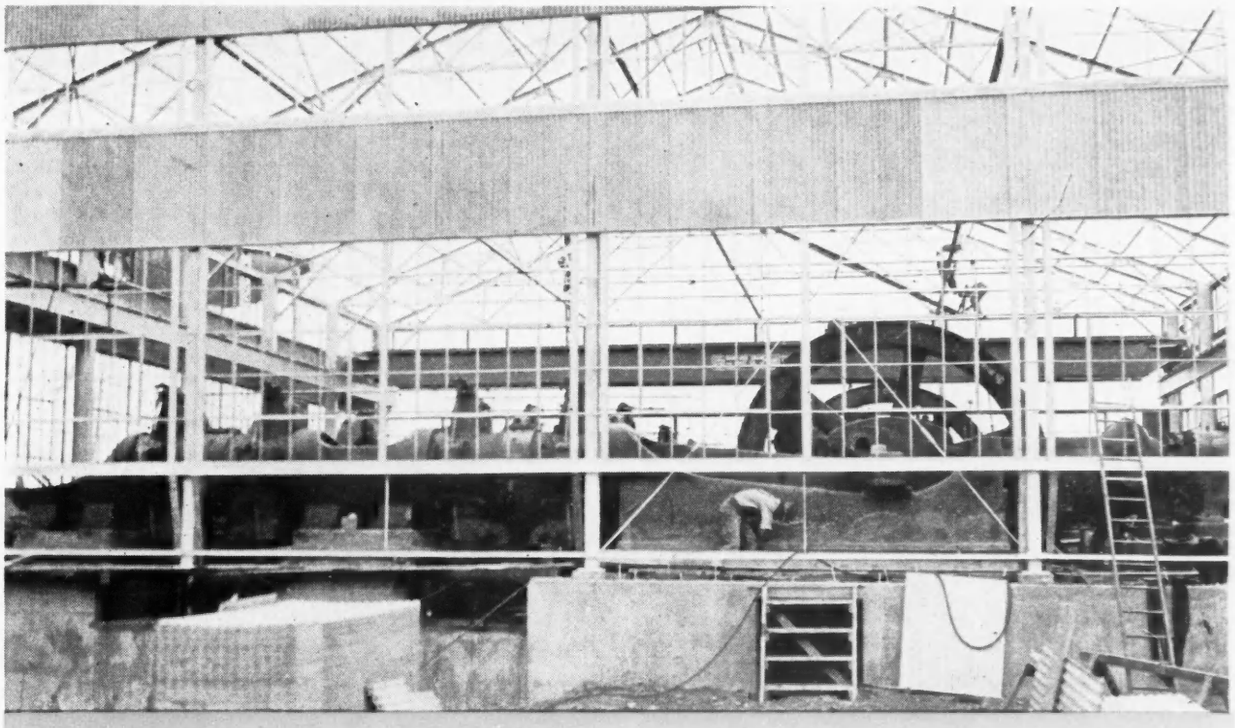
Seven 250-gallon heating pots were used to keep a sufficient volume of hot enamel for 6000 linear feet of 16-inch pipe. These pots were equipped with recording thermometers and are asbestos lined. The enamel was cut up in a large coating box which held 25 drums and the pots were charged from this container.

Experience in the past indicates it is economical and practical to move to a new coating site for each 10 miles of pipe. This is not true of sizes of pipe less than six inches in diameter. However, no set rules can be laid down for this type of work any more than can be for other kinds of contracting work. Circumstances alter the case. Ordinarily, about three days are involved in breaking down one coating plant set-up, moving it to another site and reassembling before operations can be started again. However, it is possible to coat and wrap pipe so much faster than it can be laid that this loss of time does not influence any of the laying operations.

The central coating plant is an intermediate between the field and mill applied coatings, and is believed to eliminate the shortcomings of the previous field-applied jobs. The method and procedure is equally applicable to second-hand pipe. The method embodies the following advantages: perfect coating, free from "holidays"; easy inspection; short hauls from the coating site to the right-of-way; no loss of time due to weather conditions; and the use of a large number of local laborers, which is a factor in good-will and public relationship. The cost is controlled, since there is no wastage of materials, and production is very high per man-day. The pipe-line company also is assured of a definite quality of coating and wrapping. The cost is known in advance, since the work is taken on a typical turn-key basis by a coating contractor, who furnishes all labor, material and equipment.



Finished pipe moving out of coating and wrapping machine. Note large rolls of felt for machine use.



Main engine room, Panhandle Eastern Pipe Line Company's Haven Station, with main units in place

28,000 Horsepower Being Added to Panhandle System

HAVEN STATION ONE OF SEVEN UNITS UNDER CONSTRUCTION IN EXPANSION PROGRAM

By FRANK B. TAYLOR, Staff Writer

CONSTRUCTION of seven new compressor stations and the complete revamping of transmission facilities of Panhandle Eastern Pipe Line Company to handle natural gas for Detroit delivery, is the foremost natural gas trunk line development of the present. Expansion includes the completed 230 miles of 22-inch main line from Zionsville, Indiana to Detroit, the increase of productive reserve by drilling additional wells in the Hugoton, Kansas, and Texas Panhandle gas areas; extensions to existing gathering systems in these areas, and installation of additional horsepower and other equipment in previously constructed stations. Of the major work at present under way to allow the handling of greater volumes of gas than in the past, the Haven, Kansas, station typifies other stations at lesser stages of construction and is representative of late design and engineering in compressor station construction.

Main units of Haven station, 1½ miles west of Haven, are of the direct-connected, twin-tandem type of 1300 horsepower each. Three units are being installed. Power ends are equipped with 24-inch pistons, traveling a 36-inch stroke. Fifteen-inch compressor cylinders, direct connected, with the same stroke afford a displacement of 1775 cubic inches per engine. Compressor cylinders are equipped with 2½-inch unloader valves, each clearance pocket having a capacity of 1150 cubic inches.

In addition to the main units in the main engine room, lubricating oil service tanks, control panels and oil filters will be installed. An overhead, traveling crane of 12-ton capacity will handle replacements

and aid in major repairs. Lighting equipment includes vapor-proof fixtures with outer protection. Air for ventilation will be introduced through filters to combat dust. Various types have been installed and their adequacy will be compared to determine the most satisfactory type for particular service.

An air-cooled exhaust muffler is being installed on the main engines. Replacing water as a cooling agent, the new design uses air induced by an electrically-driven fan. When desired the direction of travel of the air stream may be into the building, the air being washed in a water spray. Besides aiding in winter heating, the washing of the incoming air tends to eliminate a large proportion of the dust prevalent in many sections of the country.

A complete basement underlies the main engine room, broken by the foundations for the units, each of which required 304 yards of concrete. Engine lines are to be supported from hangers from basement walls, with as few lines unexposed as possible.

A crane was used in construction to set heavy machinery and to pull other equipment into place

Auxiliary equipment is being housed in a steel structure 128 feet in length, similar to, but separate from the main engine building and other station structures. Two main auxiliary units are being installed of 200 horsepower each. They are of the four-cylinder, vertical, high-speed type and are direct connected to alternator and excitor. Current supply generated will be 120/208 volt, 60-cycle frequency.

Two air compressors, each capable of passing 55 cubic feet per minute at a pressure of 250 pounds will discharge into 3 air storage tanks of the horizontal type.

A welded steel steam boiler with 15,000 square feet of radiating surface and an automatically operated feed pump supplies steam for heating and other uses. Near the center of the auxiliary building is the pump pit, enclosing a dual water line manifold. Six electrically-driven centrifugal pumps supply water pressure. Also incorporated in the auxiliary as part of the plant water system is a chemical rectifying water softener, capable of supplying 300 gallons per minute.

A small machine shop is in the auxiliary building, equipped to do the average expected repair work. Equipment includes grinder and drill press, each operated from the common current supply. A wash room including showers and lockers, and the station superintendent's office also is housed in the auxiliary.

Other structures related to station operation are a meter house, an overhead water storage tank of 75,000 gallons capacity capable of supplying sufficient water for one hour operation in case of a failure of supply and an aerator type of water cooling tower that includes the gas after-coolers. A three-car garage and warehouse combined is located on the property. A short distance from the station grounds proper a cottage has been completed for the station superintendent. Lubricating oil storage tanks of the horizontal type have been buried 10 feet beneath the surface of the ground. This departure allows for more facile loading and at the same time may eliminate the frequent necessity of heating lubricating oil lines in severe winter.

Driveways at the station will be graveled and concrete walks are to connect the buildings. Each structure is to be heated by means of floor type heaters, thermostatically controlled. Grounds are to be landscaped after construction work has been completed. Inlet scrubbers are not a part of station equipment, although headers have been installed to accommodate them at a later date.

Present Expansion

Since completion of the original Panhandle Eastern Pipe Line system, markets adjacent to the trunk line have gradually been acquired. A number of laterals to industrial centers in Missouri and Illinois have been in service, as well as feed lines to domestic consumers in each of the states traversed with the exception of Oklahoma. The load occasioned by the past demands did not overtax the capacity of the equipment which included 3 main compressor stations of 5000 and 4000 horsepower each on a 24-inch main line decreasing to 22-inch near the Kansas-Missouri state line and ending with a sales connection at the Indiana-Illinois line.

With the gaining of additional outlets, chiefly in Detroit through the recently completed Michigan Gas Transmission Corporation's line, the maximum volumetric capacity of the previous system had to be expanded to allow for the existing and anticipated loads. Due to the large diameter of the line it was unnecessary to parallel, but additional horsepower was required.

A field station on the main gathering line out of the Texas Panhandle is being built near Stinnett, Texas. At Liberal, Kansas, 2000 additional horsepower are being added to the 5000 already installed. Also, at this point which is at the junction of the Texas and Hugoton gathering lines, a gas dehydrating and gasoline extraction plant is being built. At Greensburg, Haven and Olpe Kansas, new stations are under construction, as well as at Houstonia and Centralia, Missouri. One new station is being built in Illinois near Pleasant Hill. With the completion of the stations and the additional units being installed, the system wll have available 42,000 horsepower from the Texas station to the Illinois-Indiana line.

In addition to horsepower installation, new main line measuring stations are under construction, and at the Mississippi River crossing, two 12-inch lines will augment the present crossing capacity. These

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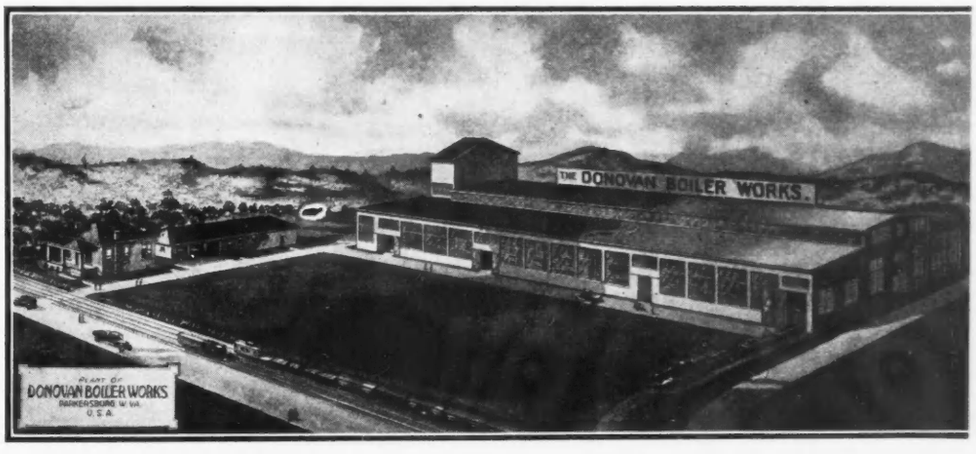

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lines are being placed under the channel near the Louisiana, Missouri bridge. A telephone system of two-wire metallic circuit is in operation, serving as a dispatch medium as far east as Kansas City, with connections at all stations and the field. Sixteen miles of circuit were completed in August to provide service to the company's Zofness camp in Moore County, Texas. This line was built in the canyon county north of the Canadian River. Due to the extreme irregularity of the terrain of this vicinity it was necessary to pull the poles to their positions by saddle horses. The wire for the line was pulled in in half mile lengths by the workmen. This short extension to the company's communication system is featured by two long river spans, one being 907 feet between supporting "H" frames.

Water Supply from Wells

In common with other stations under construction, the water supply at the Haven site is obtained from drilled or dug wells. Of particular interest in showing the practicability of obtaining water from a subsurface source at seven widespread locations from the Texas Panhandle to Indiana, are the results of drawdown tests made after wells had been completely cased. A total of 15 wells were drilled and completed under the direction of C. M. Willis to depths ranging from 28.6 to 1307 feet. Twenty test wells were drilled in connection with the location and completion of the 15 principal wells.

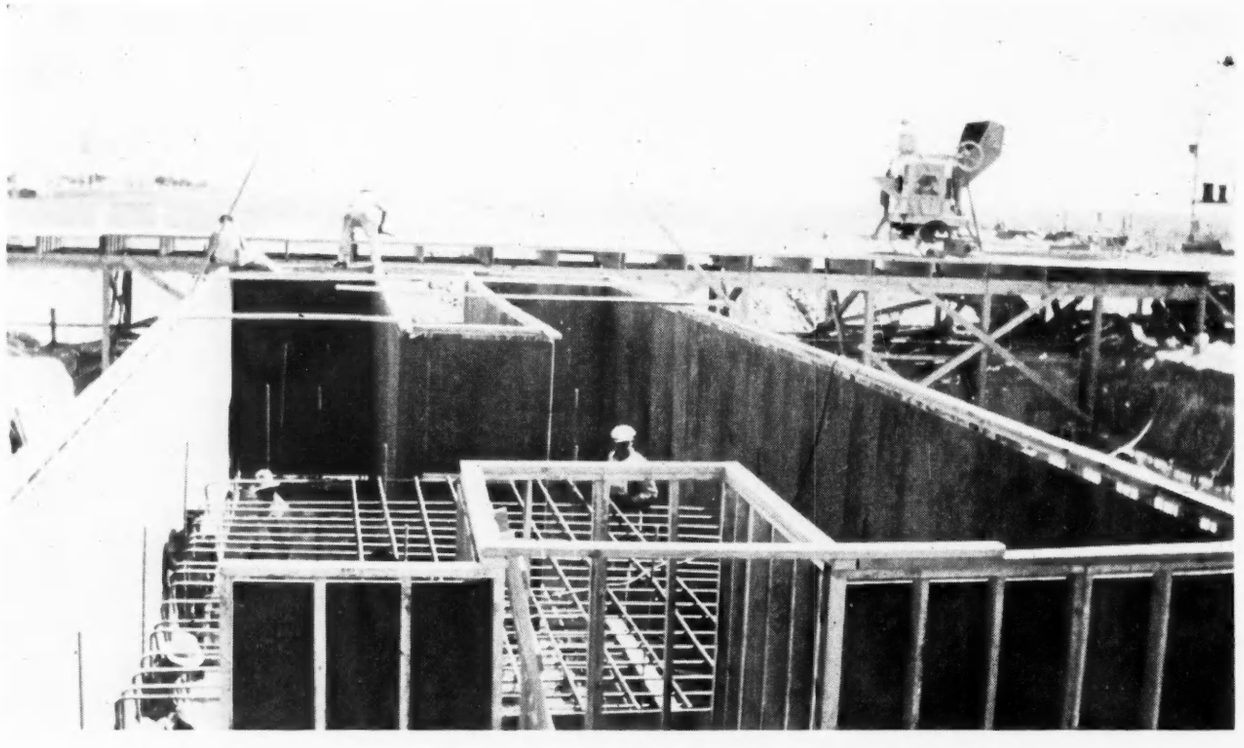
With the exception of the Olpe station site, 2 wells have been completed at each of the 7 new stations under construction. At Sneed station, 14 miles west of Stinnett, Texas, two wells were drilled to 426 feet in red shale and gravel. After being completed with a 12-inch inner casing and a 24-inch outside diameter gravel wall, they were flowed at a rate of 239 gallons per minute for an effective drawdown of only 13 feet.

At Greensburg, Kansas, the first location east of the present Liberal station, 2 wells were dug to 131 feet in sand and gravel. Tested at 160 gallons per minute, the water level was lowered only 27 inches. At Haven it was necessary, due to geological conditions, to locate the wells 1 mile east of the station sites. At this point, 2 wells were dug to 61.5 feet, first water being encountered at 26 feet. Each of these wells has an outer diameter of 32 inches with 12-inch inner concrete casing. At a producing rate of 200 gallons per minute a 10-foot drawdown was obtained, proving the effectiveness of providing an accumulative space by means of a gravel wall.

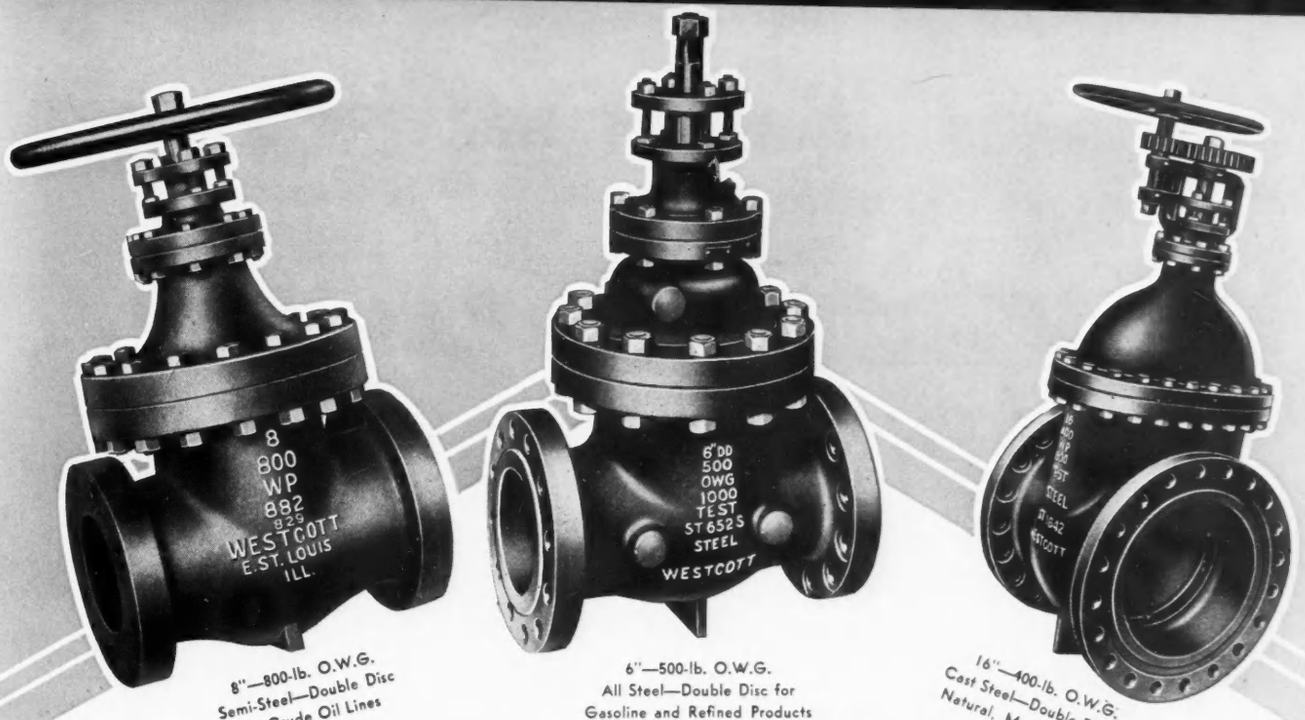
Six and one half miles from the site of the Olpe, Kansas, station, three wells were dug in the bottom land of the Cottonwood River to a depth of 28.6 feet. These wells are 54 inches in diameter and are of the gravel wall type with 12-inch casing. A test at a rate of 105 gallons per minute through a gas engine-driven turbine pump lowered the water level 11 feet.

At Houstonia, Missouri, 2 wells were drilled to 968 and 737 feet respectively. The first well, drilled into the Gunter sand, produced 182 gallons per minute with a drawdown of 80 feet. The second well at 737 feet in the Roubiboux sand at 600 feet produced 114 gallons per minute to effect a drawdown of 115 feet. At Centralia, the last Missouri site, two wells were drilled into the Gunter sand at 1302 and 1307 feet respectively. On a test of the first completion, 422 gallons were produced per minute through 10-inch casing and 212 gallons through 5-inch for a drawdown of 8 feet.

At Pleasant Hill, Illinois, 2 gravel wall wells were completed on top of shale at a total depth of 107 feet. Both of these wells have an outside diameter of 22 inches with 8-inch casing, and are located in the Mississippi River bottom land. With production at 162 gallons per minute the drawdown was 1 foot 4 inches.



Construction of main engine foundation, Sneed Station, on Panhandle Eastern Pipe Line Company's line



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INCREASED NUMBER OF INSTALLATIONS AND LARGER GENERATORS BEING USED IN

Cathodic Protection Of Pipe Line Systems

By DENIS S. SNEIGR

DURING the past year, developments in cathodic protection of pipe lines have been confined to minor changes in the equipment with a trend toward larger generators and an increased number of installations, the latter pointing to the success of this method of combating corrosion.

This soil corrosion is an electro-chemical action, the electricity being generated by chemical conditions in the soil surrounding the pipe line. These currents pass from the soil to the pipe and then leave the pipe and pass back to the soil at another point. At the point where the currents leave the pipe, corrosion occurs. The principal of cathodic protection of pipe lines is to keep the potential of the earth around the pipe higher than the potential of the pipe. In this way, the currents which cause corrosion are prevented from leaving the pipe, thus overcoming corrosion.

Of several sources of power available for this work, purchased power is the most satisfactory. However, in many cases commercial power lines are not available for isolated locations and some means of generating the power must be relied upon. In this event, either gas-, gasoline-, kerosene- or wind-driven generator can be used.

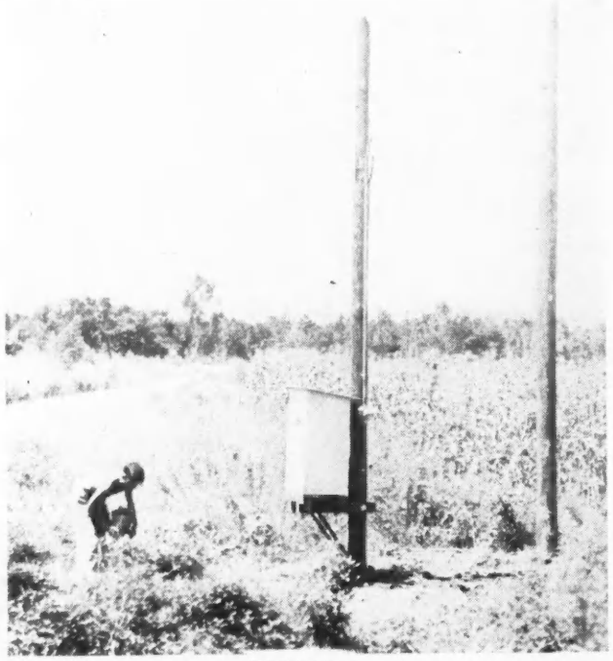


FIGURE 1

A transformer and rectifying unit are enclosed in the metal box. Current from the power line is changed to direct current for applying cathodic protection to pipe lines

In the first cathodic protection units, installed about 4 years ago, purchased power was used. Such a unit consists of a transformer, which changes the high voltage of the power line to the required low voltage, and a rectifying unit, consisting of multiple 3-ampere units for changing the alternating current to the direct current necessary for this work. The number of 3-ampere units used depends on the requirements of the particular installation. For example, if 30 amperes were required, 10 of these 3-ampere units would be used.

The average life of such a unit is about 10 years, due to its extreme simplicity. There are no moving parts and once installed they require no attention. The entire unit is enclosed in a metal box and mounted on a pole (Figure 1). The fact that there are more of these units in service today than any of the other methods of cathodic protection points to the success of this method.

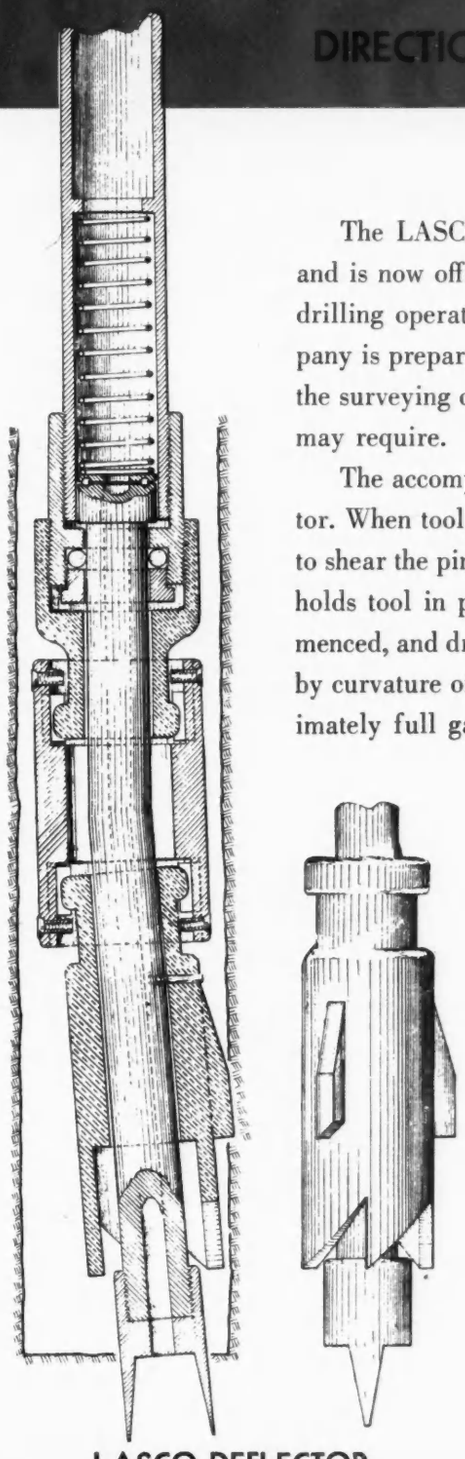
Engine-Driven Units

The engine for driving this type of unit is a two-bearing, single-cylinder, air-cooled design. The fly wheel acts as a fan for circulating the air and cooling the engine. The air enters the top of the engine above the cylinder head and circulates down around the cylinder and the crankcase where the fly wheel discharges it outside the housing of the unit. In starting the engine, a small battery is used. After the engine is running, a switch is thrown which changes the source of electrical supply from the battery to the generator. The battery then is removed and the engine's ignition is supplied by the generator.

In the event that a short developed in the electrical system, or if there were an overload on the generator, or if the lubricating oil ran low or escaped, the engine would stop automatically. This is true because the exact amount of fuel necessary to take care of the load required of the generator is set to enter the engine. The ignition is supplied by the generator, which if slowed down by any of the above named

LASCO DEFLECTOR

DIRECTION CHANGING DRILLING DEVICE



LASCO DEFLECTOR
PATENTS APPLIED FOR

The LASCO DEFLECTOR has had numerous satisfactory test runs and is now offered to the industry for all types of open hole directional drilling operations in the Gulf Coast area. The Louisiana Supply Company is prepared to furnish this tool on a lease rental basis and supervise the surveying of same into wells for such directional drilling as operators may require.

The accompanying sketch shows the method of operation of the deflector. When tool reaches plug, or bottom of hole, enough weight is applied to shear the pin, releasing spring against bent shaft, and anchor bit on end holds tool in predetermined position; rotation of outer bit is then commenced, and drilling proceeds in usual manner and at an angle determined by curvature of shaft. The deflected hole is drilled by this tool to approximately full gauge size, making it unnecessary to ream out before proceeding with regular bits, and thus saving the time and cost of extra in and out of hole operations.

The chief advantages of the deflector are: Getting off cement plug at the desired angle; changing direction of drilling at bottom to straighten hole; and in reaching sands under overhanging salt domes. The usefulness of the deflector is not limited to these conditions and situations, however, but extends to all cases where it is desired to secure a change in direction of drilling at a minimum cost.

In the State of Texas the Lasco Deflector Service can be secured from Louisiana Supply Company, and it is also available through Stone Oil Tool Company of Houston. Competent engineering service can be furnished in connection with directional drilling problems.

For further information regarding the deflector, terms, etc., apply to

LOUISIANA SUPPLY COMPANY

SULPHUR, LOUISIANA

causes, reduces the amount of electricity supplied to the ignition system and stops the engine.

The unit is enclosed in a metal box, which gives it full protection from the elements (Figure 2). Usually they are mounted on a raised platform about 3 or 4 feet high, but in one case the unit was mounted on stilts 12 feet high. This installation was in Southern Louisiana where high flood waters are a frequent occurrence.

Such an engine will burn either kerosene or gasoline, and by the addition of a special mixing chamber, natural gas may be burned. The natural gas may be taken directly from the pipe line which the unit is protecting, if installed on a gas system. Each unit consumes about 15,000 cubic feet of gas a month. If liquid fuel is burned, a 75-gallon tank is used. The engine burns about 2 gallons every 24 hours and a 75-gallon tank will operate the unit for about a month. The oil of the splash and pressure lubricating system is changed each month.

These units are expected to give steady service for about 3 or 4 years. One advantage of the engine-driven units is that they will protect more pipe than the wind-driven unit. For example, where the wind-driven generator will protect a half-mile of pipe, the engine-driven generator will protect from 1 to 2 miles. This is due to the fact that the gas engine supplies a steady output of current, while the wind-driven generator varies its output with the intensity of the wind. Just how much pipe these units will protect, however, depends upon the soil conditions of a given location.

Wind-Driven Units

The early work on these units (Figure 3) was done by J. L. Culbertson, chief engineer of The Texas Pipe Line Company. The operating principle of these wind-powered generators is well known and it is the purpose here to discuss briefly only the recent developments in design. The most important change in the past year has been in the propeller arrangement, which moves the propeller out of the wind at high speeds.

This has been accomplished by installing another pivot in the unit. Besides the main pivot point around which the entire unit turns to keep it facing the wind, another pivot has been installed near the propeller. The propeller is off-set and does not turn on the generator shaft. At the point where it is off-set, if the wind is unduly high, the propeller will turn back alongside the unit. A spring pulls the propeller back to its normal operating position when the wind velocity drops.

Another item of importance is the increased size of the generators being used. A few months ago 35- and 40-ampere generators were employed. Now the size has been increased to 70 and 90 amperes. These generators are operated between 500 and 600 revolutions per minute.

The following data shows the results obtained by two major companies with wind-driven generators. On an oil pipe line, 24 leaks occurred from March, 1934, to June, 1935. In June of 1935, wind-driven

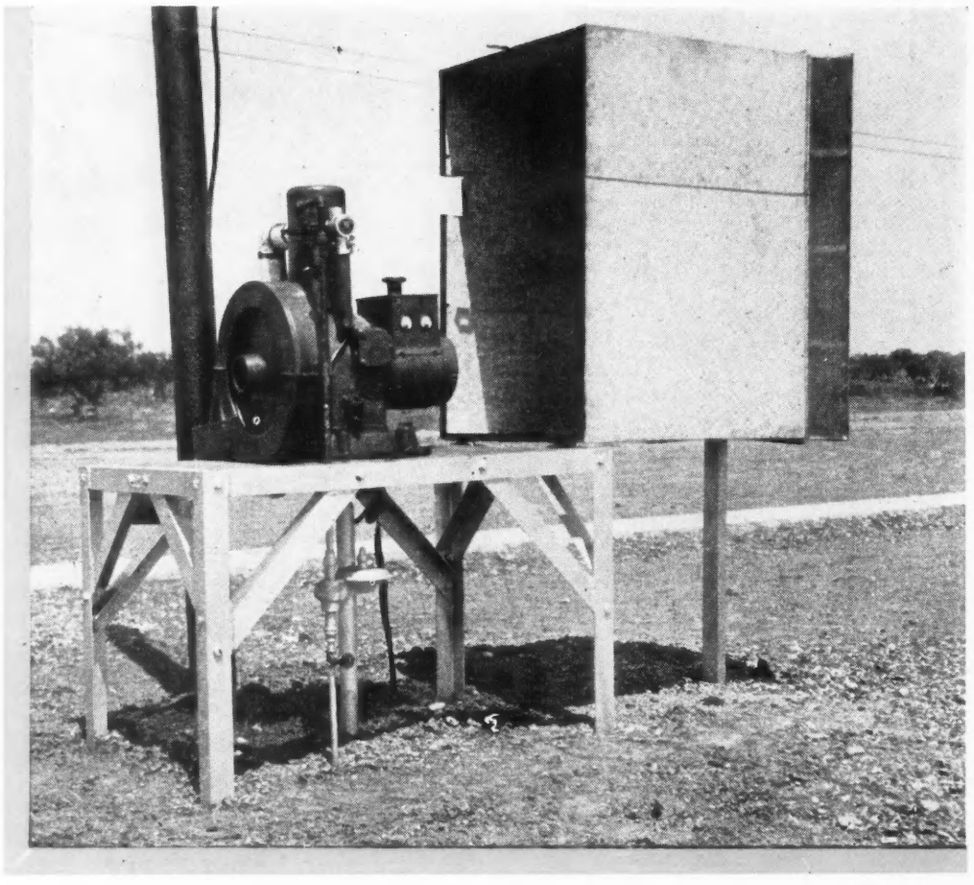


FIGURE 2

Engine-driven type of unit for providing cathodic protection to pipe lines

Hundreds of pipelines like this one, totalling in all over 20,000 miles, are back of the service that Linde offers for your profitable utilization of Multi-Flame Lindewelding.

20,000 MILES OF PIPELINE EXPERIENCE
is behind Multi-Flame Lindewelding

Multi-Flame Lindewelding was developed by the Linde organization from actual experience with the welding of more than 20,000 miles of pipe. Starting with the first use of welding on an overland pipeline in 1911, Linde has been continuously and actively engaged in the improvement of pipeline-welding operations. With this background, Lindewelding has, as its first requirement, the production of welds fully as strong and as ductile as the pipe itself.

Multi-Flame Lindewelding is fast and economical even under varied field conditions. It saves 15 to 40 per cent in oxygen, acetylene, and welding rod and often as much as 50 per cent in time required to make welds.

The many benefits of Multi-Flame Lindewelding are further enhanced by Linde Process Service, which focuses on your particular problems the practical experiences gained in servicing the welding and cutting needs of more than 100,000 users of Linde products. The vast scope of this service is made possible only because Linde has access to the extensive research and engineering staffs of the great organization of which it is a unit. Linde Process Service is not for sale—yet is given gladly to all purchasers of Linde Oxygen. Why not have Linde work with you on your next pipeline project? Address The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation, New York and principal cities.

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generators were installed. And from June, 1935, to May, 1936, only two leaks occurred.

On a gas pipe line, 34 leaks occurred between June of 1933 and October of 1935. A three-unit wind-driven installation was made in October, 1935, and from that date until June, 1936, only one leak occurred.

Operation of Cathodic Protection

When a cathodic protection unit is placed in operation on a pipe line, a chemical reaction, as well as an electrical reaction, takes place in the soil near the pipe. Various chemicals in the soil, mainly the magnesium and calciums, are coated onto the pipe by a process similar to electro-plating. This reaction forms a white coating on the pipe line which resembles porcelain. In time this coating becomes thicker and thicker. It has a high resistance to corrosion and as the coating becomes thicker the amount of necessary electrical output by the protection unit can be lowered. The chemical composition of the various soils varies with different localities and thus the chemical composition of this coating varies.

As to the matter of ground-beds for these various units, there still is a difference of opinion among engineers, some contending that the vertical ground-bed is superior to the horizontal ground-bed and vice versa. However, one major company uses the vertical ground-bed exclusively in Louisiana and plans to experiment with even deeper ground-beds than are being used at present.

The vertical ground-beds being used by this company are pieces of pipe sunk vertically to between 15 and 20 feet. As an experiment, this company plans to use a core-drilling outfit and drill holes down to between 20 and 40 feet for the ground-bed. Just how this use of deeper ground-beds will effect the efficiency of the protective units remains to be seen.

There is little possibility of any major changes in the cathodic protection units, with the possible exception that even larger generators may be employed. Another angle that is being worked on by engineers is the perfection of a Diesel engine which will operate successfully on crude oil taken directly out of a pipe line. In this way, engine-driven generator would be as easily applicable to oil pipe line protection as it is to gas pipe line protection. The necessity of a fuel tank for kerosene or gasoline and the trouble of hauling the fuel would be eliminated.

Also, it has been reported that one of the major companies plans to experiment with the cathodic protection of other sub-surface equipment such as casing and pumps in wells and also with tank bottoms. In fact, one major company has applied cathodic protection to several of the water wells at one of its refineries. These water wells are all shallow wells operated by electric pumps, a connection has been made to a transformer and rectifying unit and protection easily afforded the water wells.

The company applied this method of protection after several water wells at the refinery had been abandoned due to excessive corrosion. However, these are shallow water wells and they do not present the problems in cathodic protection that would be afforded by an oil or gas well of even average depth. Nevertheless, the success in protecting these water wells may point the way to interesting experiments on deeper wells.

The development of the Diesel engine mentioned above, along with a wider application of cathodic protection to equipment other than pipe lines are the major developments in sight for the near future.

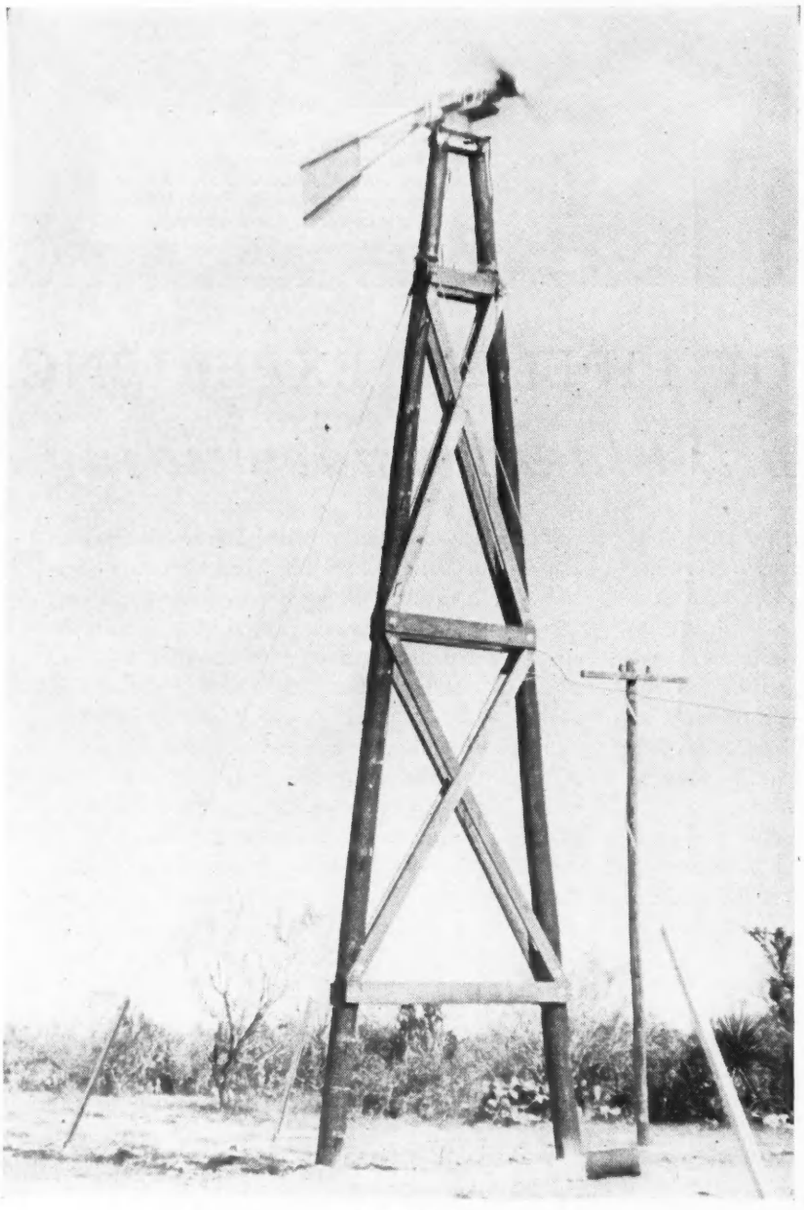


FIGURE 3
Wind-driven generator for cathodic protection of pipe lines

A GOOD PRACTICE TO FOLLOW IN

Keeping-Up Station Stand-By Equipment

IS TO GIVE IT FREQUENT TESTS

By ELTON STERRETT, Engineer

PIPE line station stand-by equipment divides naturally into two widely separated classes: that which is the same as the other pumps, and that which is completely independent of and different from the regular units.

In the first class, provision of stand-by capacity involves simply the installation of another pump and power unit, or, in the larger stations, two or more such assemblies. With such stand-by, the chief engineer of the station need be careful only to schedule the various units under his charge so that each pump carries its pro-rata portion of the pumping over each operating month.

Where this type of stand-by is provided, the problem of upkeep becomes simply an extension of the other plant maintenance program and no special care or routine is involved, provided the pumping load be rotated to put each pump on the line frequently.

Where the stand-by capacity is provided by different types of machines, with a different source of power, as where motor-driven plunger or centrifugal pumps supplement other units ordinarily driven by Diesel or gas engine, the problem of maintenance is much more difficult. For one reason the stand-by units are apt to remain idle over a long period.

In one pipe line station two duplex 24x4-inch pumps, each driven by a 200-horsepower induction motor using purchased power from the local utility company's high-tension lines, provided the necessary stand-by equipment for peak load or breakdown of either of the two Diesel-driven regularly used pumps. In this station, the chief engineer scheduled weekly inspections of the two idle pumps, the flexible couplings being disconnected so the rotors might be turned by hand so as to bring fresh lubricant up onto the oil rings running in the main bearing fonts, and thus distribute it over the babbit to insure against loss of the lubricant film, or the possible formation of a dust line at the junction of the bearing halves.

The contract with the power company carried a clause whereby operation of either unit for a period exceeding 15 seconds established a power demand and automatically added $500 to the power bill for the month, in consequence of which the stand-by units were idle from the date of their last run in 1932 until early in 1936, when a large diversion of crude made the operation of the motor-driven pumps in tandem with the other units desirable.

Before a switch was thrown or the flexible coupling tie bolts replaced, each motor was rotated by hand. They turned as freely as on each weekly test. The old oil was drained from the fonts and replaced by new of the proper grade, and the equipment put on the line. Almost at once, the motor on the pump nearest the building wall began to run hot on its outboard bearing, quickly reaching a temperature demanding a shutdown.

Inspection of the bearing plainly showed the effect of heating, but nothing indicated lack of lubricant or change in the surface of either motor shaft or bearing halves to account for any such rapid heating. Off and on the line at frequent intervals, as temperature conditions dictated, not even the installation of an emergency oiling system, feeding oil through the peep hole at the top for oil ring inspection and draining it from the sight level glass could keep the bearing within safe operating limits. Finally, when a Diesel kickoff just at shift changing time and the motor was momentarily forgotten, the troublesome bearing overheated and went out, ruining the end of the rotor and involving a repair job that mounted well toward the cost of a new unit.

Inspection of the wreckage failed to show any outstanding cause, except that, even after the severe vibration of the motor at the instant the bearing gave way, there remained some bits of brown earth between the blades of the built-in ventilating fan at the end of the motor rotor.

Word of this puzzling motor failure reached another pipe line station having similar stand-by provision and led to a thorough inspection of the motors. Here the passages between the vanes of the ventilating fans were found to be partially clogged with densely compacted masses of earth that were nests of the common mud-dauber, the accretion in the end of the motor nearest the station door being concentrated in less than a quadrant of the blower. This obstruction was dug out and the resulting material saved and weighed. The accumulated nests total 5.92 ounces, practically the whole amount being concentrated in a narrow arc at the edge of the ring reinforcing the tips of the ventilator fan blades. Assuming concentration at this spot, and applying the formula for ascertaining centrifugal force

$$F = \frac{w \pi^2 N^2 r}{900 g}$$

where w is the weight in lbs. (5.92 oz. equals 0.37 lbs.); N is the revolutions per minute, or 3600; r is the radius of gyration, being six inches or 0.5 feet; and g is 32.2; the resultant force necessary to balance

the centrifugal effect is thus 816.5 pounds, which is ample to unbalance the high-speed rotor and force out or greatly reduce the effectiveness of the oil film which alone could oppose this distorting load.

After thoroughly cleaning all the rotors and housings, to prevent further entry of the mud-daubers into the air spaces blocks of one-inch wood were formed to fit each of the various inlet ports and their edges faced with felt so that, when tapped lightly into place, all motor openings were sealed tightly. As these stops were all different, they were numbered according to a scheme which permitted their unfailing return to the right aperture, and paper sealed across the outlet vents.

To guard against any station operator attempting to start these motors with the removable vent stops still in place, they were painted a bright red and an oblong block of the same material, and of the same striking color, was bored at one end so it could slip over the handle of the master switch. On the block was lettered "Clear Motor Ports."

It is necessary to remove this block before starting the motor, thereby giving warning of the motor stops.

In a test of this method of safeguarding the motors, the main switch was cleared without heeding the warning thereon, and the pumps loaded. As was expected, the temperature-overload relay on each unit acted to cut off the power supply before heating had progressed beyond the setting on the scale, and no damage was incurred.

Another instance of motor-driven stand-by equipment being partially wrecked when suddenly put on the line, occurred at a pipe line station where two 4-inch motor-driven centrifugal pumps, connected in series to buck line pressure, were put in.

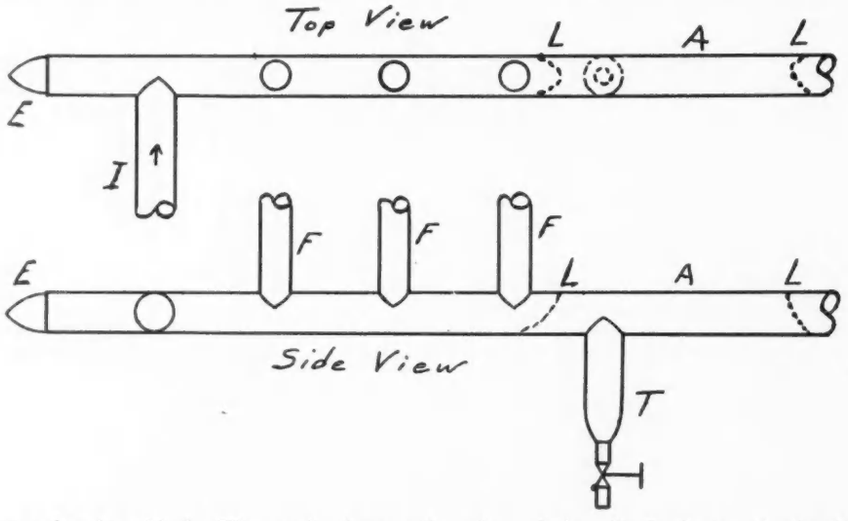


FIGURE 1

I—Suction inlet
F—Pump suction leads
L—L—Limits of sand dike
E—Projected extension
A—Actual extension
T—Sediment trap

As shown in the skitch, Figure 1, the suction for these new units tied in at the right of the 12-inch header, into the top of which were welded the 3 lines serving the original plunger pumps. After an emergency demand was over, these stand-by pumps, although rotated by hand frequently to insure continuity of bearing oil films, did no pumping over a period of 3½ years.

Then, hurriedly put on the line when breakdown of the next station in the line necessitated a temporary boosting of the initial pressure, one of the centrifugals promptly cut out its end bearing, scored the impeller clearances, and jammed.

Although the strainers on the crude oil bypass line serving as lubricant supply for the pump had been inspected just prior to the start of the run, they were found tightly packed with sand after the sudden stop, as were the one-inch pipe lines serving them and, in fact, even the impeller and the suction passages in the pump casting.

Inspection of the suction extension installed from the right end of the original manifold serving the plunger units showed, through rust and sand still adhering to the interior of the 12-inch pipe, that a sand dike had built up somewhat in the shape indicated by the dotted lines "L—L" of the sketch, measuring a good 8 feet in length and, assuming from particles still adhering to the metal, completely blocking the diameter; thus forming a plug which must have moved pumpward almost en masse when starting of the centrifugals allowed suction line pressure to start it.

Following discovery of the dike traces, the bull plug at "E" was pulled and it, too, was found to be packed full of sand. This material evidently had been deposited, in minute increments, as the inflowing stream of oil from the farm tanks had eddied in the horizontal line as its flux was being diverted into first one and then another of the risers leading to the original setting of pumps.

To guard against a repetition of the formation of a dike at "L", a nipple or trap "T" was welded into the bottom of the line at a point just within the limit of the earlier stoppage at the side nearer the vertical risers. At its base was welded a 12 x 4-inch swage carrying a valve and a short open nipple.

Cleared at regular intervals, this trap gives varying amounts of sand and paraffin, during one of the 30-day periods accumulating two 10-quart buckets of material, and on another giving a scant quart on being flushed out—both of these from a flow through the suction header of approximately 30,000 barrels per day from oil which, at the sampling cock, showed a bs&w content ranging from a bare trace to as high as two-tenths of one percent.

Instances such as those cited go to show that stand-by equipment, to be certain it is in condition to deliver rated output on short notice, should be so powered and connected that it can economically be given frequent test or actually share in the pumping duty at intervals scheduled closely enough together to prevent or at lease minimize the occurrence of extraneous hazards such as contributed to the failures herein described.

Pipe Line Design

IS REFLECTED BY CONSTRUCTION IN CORPUS CHRISTI AREA THE PAST YEAR

By EARL S. POST, Staff Writer

KEY factors in the proper construction, care and maintenance of pipe lines is shown in the Corpus Christi sector of South Texas, where one of the most active building campaigns of the past year has been under way. Pipe lining generally has shown no great change during the past several years, except possibly in an effort to apply anti-corrosive treatments.

A description of the common practices of pipe lining in this immediate sector may prove to be of valuable assistance in projects elsewhere.

The majority of the construction in this sector has been short, small diameter lines; the largest of the newer projects being an eight-inch main. The smallness of the lines and the necessity of handling large volumes of crude brings to light the necessity of adequate pump and booster-station facilities. In a number of cases, lines are carrying quantities of crude apparently in excess of their capacities. Yet, their pressures are not sufficiently great to make the lines particularly dangerous.

A new project, being constructed by Southern Pipe Line Company from the Saxet field to Avery Point on the Corpus Christi ship channel, will be able to handle 13,400 barrels of crude per day through a combination 4½- to 6⅝-inch line under a pressure of only 200 pounds. The line is only nine miles long, but it is in a position to pick up a huge quantity of crude for quick transportation from the field to terminal tank farm at the port. Likewise, it will handle two grades of crude.

A 7-mile section of 6⅝-inch pipe will run from the terminal to a point on the eastern edge of the Saxet field, where a pump station will be located. At this point, the line will split into two units, a 5½-inch line running northwest into the Saxet Frio area, while the 4½-inch spur will run to Clarkwood in the heart of the shallow area. Pump stations will be located at the end of each of these lines. The 28-gravity shallow crude will be pumped into the line under a 250-pound pressure to the junction with the larger line where it will be boosted along at the same pressure. Upon completion of the run, the valves will be closed and the 38-gravity oil from the Frio area will be handled in a like manner. The 2-mile haul in the smaller pipe will build up a great deal of friction, but when released into the larger line, the friction will be so greatly relieved that the oil will move rapidly. The 3 pump stations will be powered by 5 by 10 pumps. Under the above operation, it will be possible to move 10,000 barrels of crude per day

Loading facilities of The Texas Pipe Line Company, Republic Pipe Line Company and General American Tank Terminal and Storage Company on the Corpus Christi ship channel

under 250 pounds pressure. As the demand for handling this crude increases, another 5 by 10 pump will be placed at the juncture of the smaller lines with the larger pipe, thus enabling the system to handle 13,400 barrels under only 200 pounds pressure.

While the general elevation of the field is constant, requiring pumping of the majority of the oil from wells to pick up storage at the line, this set-up, in the opinion of the owners, will enable the maximum utility for the minimum expenditure of pump energy.

Station Designs

Both Diesel and electric pumping equipment is proving popular in the construction of pump and booster stations. Neatly designed stations such as are being used in these lines are not only providing a high degree of efficiency, but are unusually safe. Concrete foundations, metal buildings, cement floors, adequate space and enclosed equipment assure longer life to the stations with far less supervision. Being constructed in this manner, cleanliness is a simple matter. While this particular feature apparently is of little importance, it greatly reduces possibility of accidents through burned or cut hands, broken bones from slipping on waste oil, etc., costing both time and money.

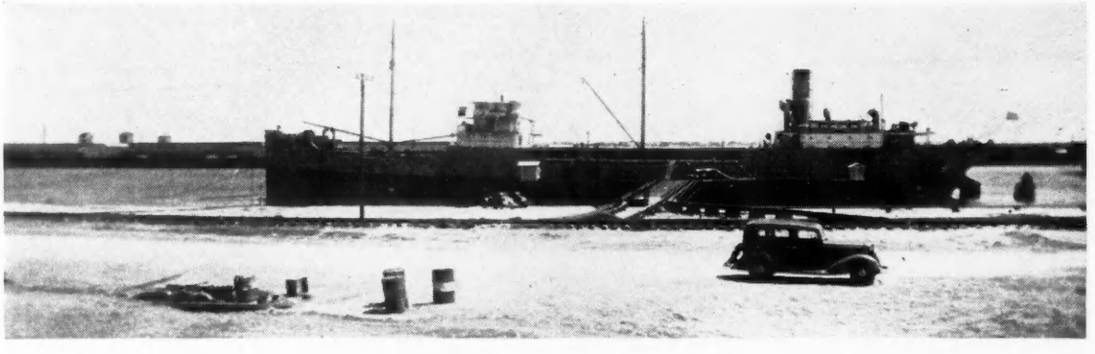
Booster station efficiency to the utmost degree is evidenced in Crude Oil Pipe Line Company's line from the Government Wells-Loma Novia district in Duval County to Corpus Christi. It originally was intended to construct 23 miles of 5½-inch line from the field to San Diego, where the crude would be loaded onto tank cars for shipment. While the line was under construction, it was found advisable to extend the main to Corpus Christi, a distance of 55 miles, making the entire line 78 miles. On the original line, a 40-horsepower Diesel pump station in the field was handling the crude to the terminal 23 miles away. When extended, 2 more pump stations were installed, one at San Diego and another at Banquette, both being powered by 40-horsepower Diesel engines. Under pressure of 450 pounds, which was capacity, the line would run not more than 6000 barrels per day. Contracts to deliver 7000 barrels of crude per day made an increase in the line necessary, which is being effected through the building of stations at Robstown and Alice, about 15 miles apart. These stations are powered by 60-horsepower units. The increased size of the alternate units makes it possible to increase the line pressure to around 600 pounds and move 8500 barrels of oil per day. The oil being moved is 22 to 26 gravity.

Due to the highly corrosive elements in the caliche and salt water at different points along these lines, all pipe is carefully treated. Some of the pipe is wrapped and treated before it leaves the plant and is again treated at the time it is laid. This especially is true in the salt-water areas wherein the lines lie in water or marshes. In some instances, the pipe after a number of years of use is in good condition where the coating has not been destroyed by some accident. Sometimes shallow waters attract oyster colonies and they cling to the pipe, apparently eating the coating. As soon as the coating is damaged, the corrosion sets in and pipe is quickly destroyed. This especially is true of gas carriers.

Importance of determining the ultimate need of a pipe line system is particularly evidenced in considerable reconstruction work now under way. In several cases lines have been constructed in this general area to take care of immediate needs. The systems are of sufficiently large diameter and capacity, but the weight of the pipe and material used is unusually light and will withstand the elements for only a few years. During the peak days of the field the line is adequate, but long before the depletion period, it commences to give trouble, leading to loss of time in use, evacuation and replacement, and a number of other expenses which generally far exceed the saving over making a larger initial investment. Considerable of such replacement work of this type is under way in this sector.

Republic Pipe Line Company foresaw the hazards from the above. A study of Plymouth field reserves, ultimate-recovery period or life of the field and such other elements entered into the planning of the line. It was determined that a 5½-inch main of unusually heavy material would be required to handle the crude. Upon completion of the line, which included double coating, etc., in part, owners were satisfied that maintenance worries and expense had been reduced to a minimum.

Something of high importance in pipe line engineering is shown in this line. The ditching was done n a straght line, but the pipe was laid in the ditches in a snake shape to avert any breakage or leaks through expansion and contraction. Steel pipe is unusually flexible in small diameters, but as the size increases, the flexibility decreases making such precautions as the above vital. The irregularity of the pipe was further increased as it was laid in the water, although the temperatures in the 3½-foot Nueces Bay is fairly constant. The line was laid through 4½ miles of this bay, the job being done in record time through the use of specially-constructed flat-bottomed barge powered by a tractor. Paddle-type metal propellors were used on the wheels of the tractor.



Tanker loading at Corpus Christi

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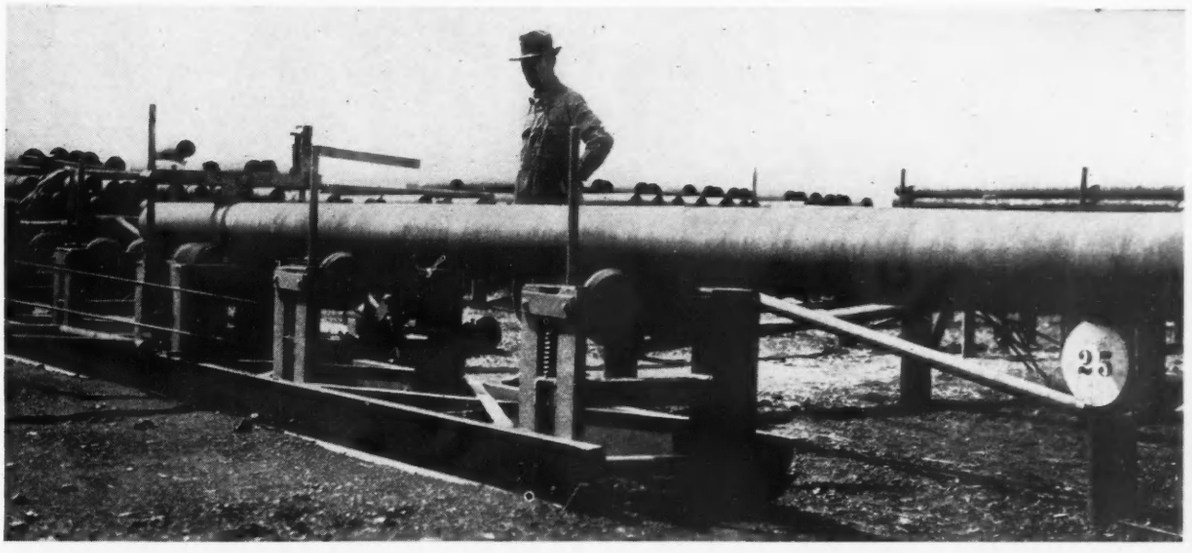

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CONSIDERATION OF FUTURE OPERATING CONDITIONS IS OF IMPORTANCE IN

Designing Stations In New Oil Fields

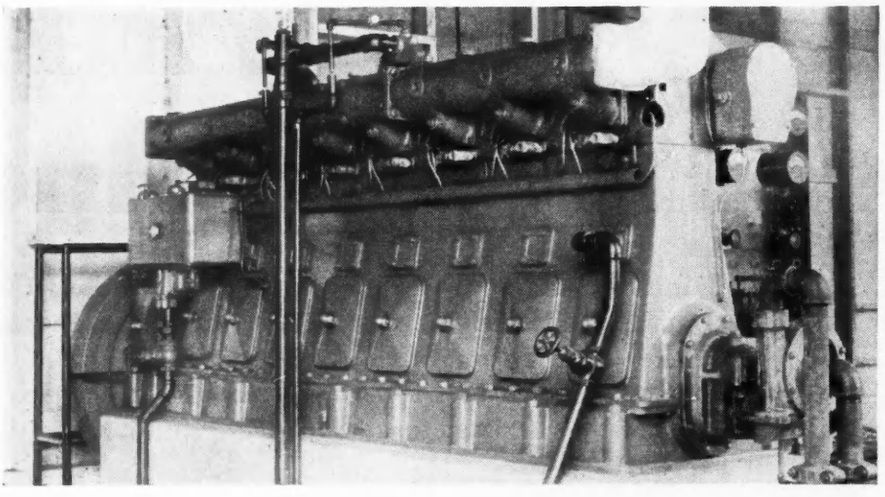
By JOHN C. ALBRIGHT

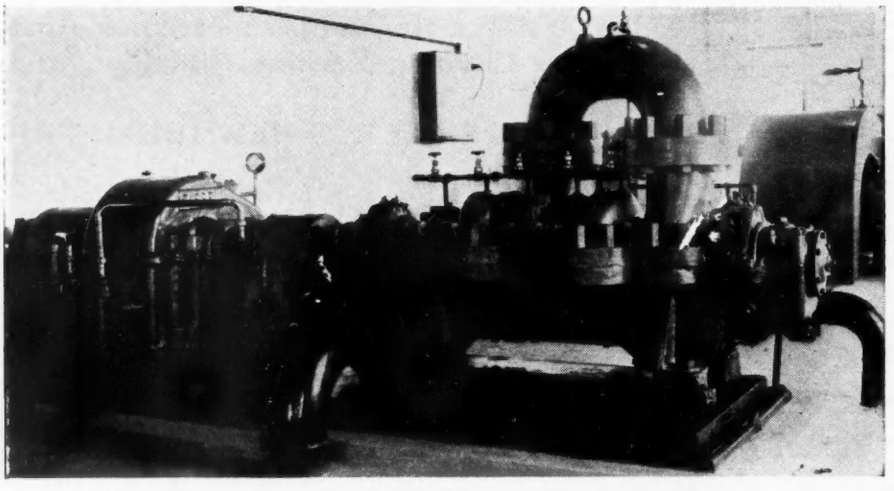
CONSTRUCTION engineers are confronted with a number of problems besides the actual building of the system when their company decides to enter a new producing area. The possible length of time the new system will be used, the need for additional facilities in the future, and the probability of desiring to change the operating procedure of the station are a few of the factors that must be studied.

When Stanolind Pipe Line Company and Oklahoma Pipe Line Company extended their systems to the Fitts field, Pontotoc County, Oklahoma, the field was being enlarged rapidly, and both concerns took into consideration the probable need for additional facilities in the future, and also provided other factors of safety. It is well that they did, for both systems have been materially enlarged over the original layouts.

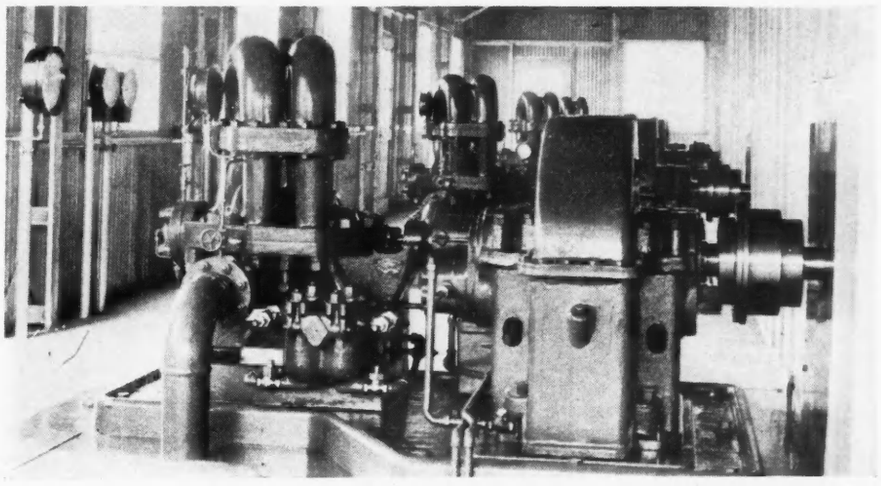
Stanolind Pipe Line Company began moving production from the Fitts field through a temporary station. Piston-type pumps were driven by gas engines, and all installed to be highly mobile. The first section of the company's permanent station consisted of two engines and two pumps, built in the early summer of 1935. In January, 1936, the second section was completed, making a station of four engines and four pumps, hooked up in such a manner that almost any combination can be used to procure the desired discharge pressure.

The type of engine installed by Standard Pipe Line Com-

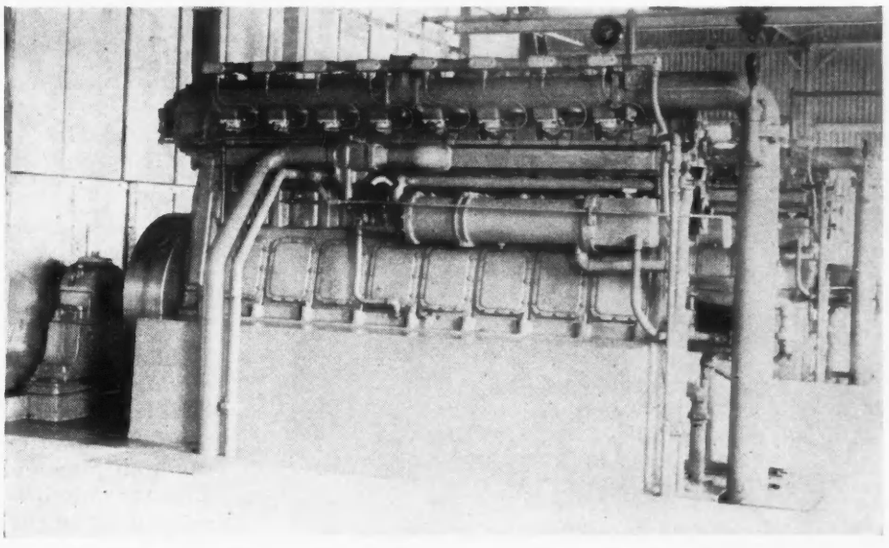




Engine and pump installations in Oklahoma Pipe Line Company station at Fitts, Oklahoma



Pumps and engines of these designs are used in Stanolind Pipe Line Company's Fitts station



pany takes care of any future fuel problems. They are designed for either gas or full-Diesel operation, with the latter as the fundamental construction idea.

All parts of the engine were cast and fabricated to withstand the stresses of full-Diesel operation, consequently are much heavier than would have been necessary if only gas was to be fuel. The cylinder blocks were cast to accommodate different size liners When gas is used, as at present, the bore and stroke is 9 inches by 10½ inches, but if converted to Diesel the cylinder size can be reduced to a bore and stroke of 8 inches by 10½ inches. These engines are rated as 300 horsepower units when operated at the normal speed of 625 revolutions per minute. Each engine is complete in itself, being equipped with individual magnetos, air filters, exhaust pipe water jacket temperature indicators, mercury switches on the magneto short wire to prevent damage from overheating, individual self-contained water pumps, and a selective indicating thermocouple instrument for determining the temperature of the individual exhaust ports.

The pumps, which are separated from the engines by a ventilated fire wall, are four-inch four-stage units set up so they can be operated in series of two to provide a two-section station when it is operating at full capacity. Speed increasing units with a flexible coupling on each side take care of the difference in speed between the engines and the pumps. The contour of the Fitts field, coupled with a downward surface dip toward the station, makes it possible for the bulk of the oil handled by Stanolind Pipe Line Company to be transported by gravity alone to the station. Only two isolated booster stations are used. To further provide individual operation of each unit, an exchanger for jacket water cooling was installed on each discharge line.

Stanolind Pipe Line Company installed a complete system of bleeder gates and lines on the station control gates by tapping the body of each large gate and installing a smaller one to remove the excess pressure trapped in the wedge compartment of the gate when it is closed for any reason. These smaller gates control the bleeder lines that connect to a common drain so the oil removed from the larger valves may be picked up and salvaged.

In the original layout of the Oklahoma Pipe Line Company station, provisions were made so any increase in horsepower or pump capacity might be accomplished without disturbing the operation of another unit. The suction and discharge headers at the station were equipped with adequate gates and taps for this purpose. Because of the growth of the field's production, the station has been enlarged 100 percent, and full advantage of the above provisions were taken at the time.

Oklahoma Pipe Line Company's original station consisted of an 8-cylinder vertical gas engine as a prime mover. It had a bore and stroke of 6 inches by 9 inches, and was designed to operate at a normal low speed of 600 revolutions per minute to obtain a rating of 109 horsepower. The pump installed with this engine was a high-pressure multi-stage centrifugal, designed to run at 3000 revolutions per minute. The speed increase between the engine and the pump was taken care of by installing an increasing unit. When it was decided to enlarge the station's output the original layout was duplicated.

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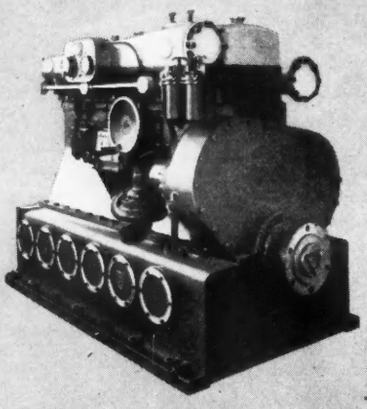

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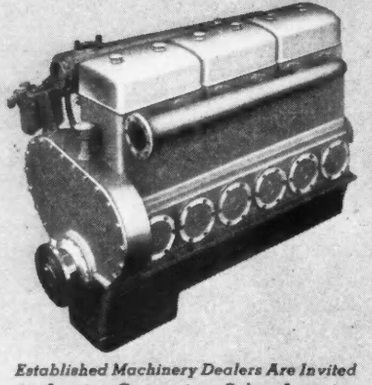

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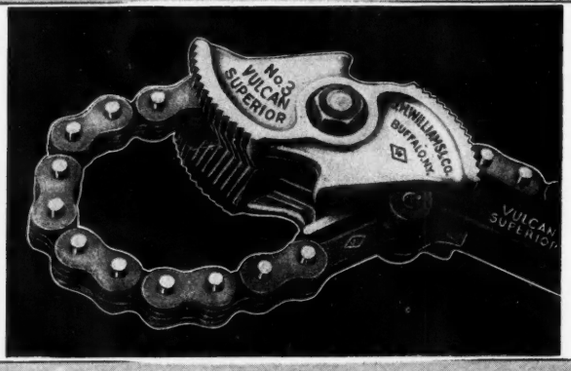

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Pipe Line Construction

DURING PAST YEAR HAS BEEN MORE ACTIVE AND OF GREATER IMPORTANCE

PIPE line construction work during the past 12 months ran far ahead of the preceding similar period, and promises to continue to be active for some time.

There was considerable expansion of gasoline pipe line systems. This work is of interest and importance, because it is only during recent years that gasoline has been transported by pipe lines. It now appears that the future will see the construction of many such lines.

The past year also saw the construction of several important gas lines, further expanding the service of this division of the industry.

Several important oil lines were laid, although the longest ones were only two or three hundred miles in length. There were numerous extensions and field gathering systems built to areas heretofore without transportation facilities.

Many Small Oklahoma-Kansas Lines

PIPE line construction work in Oklahoma and Kansas the past year consisted of small lines, but more mileage was laid than the previous year. Present indications definitely point toward an increase in construction in the future, with two major projects under way at this time. New fields in both Kansas and Oklahoma have received outlets for crude, and in areas where production has been increased through pool extension gathering line facilities have been extended.

White Eagle division of Socony-Vacuum Oil Corporation has under construction a 178-mile gasoline line from its Augusta, Kansas, refinery to a water terminal at Kansas City, Kansas. Diameter of the line is 6 inches. Williams Brothers Corporation of Tulsa are general contractors. The line survey contacts the edge of Topeka, Kansas, where a minor outlet may be included as part of the system. At the terminal at Kansas City, it will be possible to ship by barge to northwest and adjacent points.

Total cost of the construction of this major line has been estimated at $1,500,000, of which $300,000 will be expended on the terminal on the bank of the Missouri River. Work has progressed rapidly and it is expected actual line construction will be completed in September.

In the natural gas realm, Panhandle Eastern Pipe Line Company has been extended by Michigan Gas Transmission Corporation to Detroit, ultimate terminal of distribution. In addition to the eastern construction, the facilities of the trunk line from the Panhandle, Texas, and Hugoton, Kansas, gas areas to the junction at Zionsville, Illinois, are being revamped. The new construction along the main trunk includes the construction of 7 new compressor stations and the addition of 2000 horsepower at the Liberal, Kansas, station of the company. Another addition to the Liberal station will be a gasoline-extraction plant and a dehydration unit. The general expansion program includes the drilling of additional wells in the two gas-producing areas, and the extension of the present gathering system in Kansas through 4, 6 and 8-inch laterals to new production.

Major Work Completed

The most important contribution to pipe-line systems in the Mid-Continent area was the construction of Kaw Pipe Line Company's 65-mile artery of 8-inch line into Western Kansas. Kaw Pipe Line Company was organized for the construction and maintenance of this unit, and is composed of The Texas Company, Empire Oil & Refining Company and Phillips Petroleum Company. Since the primary task of line construction was completed, additional gathering lines have been laid to provide outlets for flush production in Rooks, Ellsworth, Trego, Russell, Rice and Barton Counties. Much of the recent development in West-Central Kansas has been due to the providing of increased outlet facilities for crude. With successful wildcat development progressing steadily toward the northwest, extensions to existant systems are assured and this in turn will lead to more new work in this area.

In the same region, White Eagle Division of Socony-Vacuum Oil Corporation, constructed 40 miles of 8-inch line from Burton, Reno County, to Rice County. Skelly Oil Company extended its pipe-line system into Western Kansas during the past year with a 6-inch line from Burton to Lyons, Rice County. With these lines completed, Western Kansas is being served by Stanolind Pipe Line Company, Sinclair Prairie Pipe Line Company, White Eagle, Kaw Pipe Line Company, Skelly Oil Company and Texas-Empire Pipe Line Company.

Stanolind Pipe Line Company's trunk line from the Mid-Continent to Whiting, Indiana, was increased by approximately 10,000 barrels daily capacity with the laying of 88.5 miles of loop line. Of this new construction, 30 miles was laid in Illinois and consisted of 10- and 20-inch line pipe and the remainder was laid in Missouri, consisting of the same diameter line.

Texas-Empire Pipe Line Company is looping 185 miles with 12-inch pipe in Illinois and Missouri. This is in addition to 143 miles of 10-inch from Valley Center to Pittsburgh, Kansas.

Increase in production in the shallow Nowata area of Oklahoma prompted Stanolind Pipe Line Company to lay 40 miles of 8-inch from the Alluwe to the Blake station of the company. This line, only recently completed, was welded and has a capacity in excess of 12,000 barrels daily.

Magnolia Pipe Line Company increased its Oklahoma system by the addition of 26.5 miles of 8-inch. The Fitts pool gathering lines of the same company were extended to new production and two 55,000-barrel storage tanks were erected at the Fitts field pump station. Terminus of the line is at the Maud station on the company's Oklahoma trunk line and provides a daily capacity of 20,000 barrels.

In the same area of Pontotoc County Stanolind Pipe Line Company completed 20 miles of 8-inch line to Byng station near the Bebee pool in the northwest corner of county. This construction ties into the company's Seminole system and is rated at 5000 barrels daily capacity. One pump station in Fitts pool is in service.

Northern Natural Gas Company completed 107 miles of 24-inch gas line from the Hugoton gas area to its Mullinsville, Kansas, station. Previous to the laying of this link, all Kansas gas transported through the company's lines was delivered through the 24-inch main trunk of Panhandle Eastern Pipe Line Company.

Minor Work Completed

Derby Oil Company of Wichita completed construction of a 4-inch gasoline system from the Burton area of eastern Reno County to the company's Wichita refinery, a distance of approximately 28 miles. The same company added 8.5 miles of 4-inch line to new production in the Yoder area, southeast of Hutchinson in the same county. Other gathering systems in this vicinity have been expanded to a lesser extent.

In Stafford County, Kansas, Stanolind Pipe Line Company laid 6 miles of 4-inch gathering line from Gates pool to the Hiss area near Great Bend in Barton County. The same interests have contracted to Osage Construction Company the laying of 30 miles of reconditioned 6-inch oil line from Fairport pool of Russell County, Kansas, to new production in Ellis and Rooks Counties. Prolific production recently obtained in the Bemis area will find an outlet through this service. Under work at present, this addition is an extension to the company's northwest Kansas gathering facilities.

Sinclair Prairie Pipe Line Company completed two lines into its Oklahoma City system during the past year. Five miles of 6-inch was constructed from Edmond pool to the crude system at the north edge of the city. Small stations were constructed at Edmond and Britton to give the line a capacity of about 3000 barrels per day.

With the drilling of Oklahoma's biggest

gas well on the Moore structure of Cleveland County, Sinclair Prairie Oil Company and other's Franklin 1, SE NW SE 21-10n-2w, Phillips Petroleum Company built a gas line from the well to the south end of the Oklahoma City pool. Gas from Franklin 1 was used in the south area of the city production for lifting purposes.

Oklahoma Pipe Line Company laid 12 miles of 6-inch line for crude from Keokuk, northeast Pottowatomie County, to Cromwell.

Continental Oil Company's pipe line work during the past year has been restricted. Its eight-inch oil line was completed from Geneseo, Kansas, to Valley Center with a 4-inch lateral to Mound production.

Looking Ahead

Two lines of interest are scheduled for the near future. Kansas Pipe Line Company has been granted permission by the State Department to construct a gas line from Rush County, Kansas, production into Nebraska. It is the aim of the company to extend distribution to northwest Kansas towns and Nebraska points along the north Kansas line.

Continental Oil Company has completed a survey of a right-of-way between Fitts pool of Pontotoc County and its King 1, NE SW NE 26-1n-8e, Coal County, wildcat that found 30 feet of producing sand at 800 feet. Proposed line of 8-inch diameter would carry crude from this wildcat area to the present gathering facilities in the Fitts pool of Pontotoc County.

Stanolind Pipe Line Company is carrying along the work of reconditioning the former crude line from Teapot Dome, 40 miles north of Casper, Natrona County, Wyoming, to the Freeman, Missouri, pump station. Numerous sections of this line have been in service in past years as a gas trunk line, being operated by a number of interests.

Of general interest is the work being outlined for the future in regard to pipe line corrosion. A number of companies have set aside special engineers to study line failures and to correlate data on influences detrimental to pipe-line life. With concerted effort in this direction, the coming year may bring forth new and important means of combatting line loss or of the elimination of deteriorating processes.

Texas Natural Gasoline Lines Laid

DIRECT movement of natural gasoline produced in the East Texas field by pipe line to Humble Oil & Refining Company's refinery at Baytown, Texas, has been possible since last July as result of the completion of Humble Pipe Line Company's 300-mile 8-inch closed circuit carrier that originally served as a crude oil line. Sections of new line, aggregating about 60 miles of new pipe, were constructed at intervals where 8-inch pipe was not available for diversion from crude to gasoline movement.

Conversion of the crude line began early in 1936. Oklahoma Contracting Corporation was awarded contract to remove the old screw pipe, weld the collars and completely renovate. Sections of the line exposed to severe corrosion were cut out and replaced with new pipe. Several weeks were required to thoroughly cleanse the overhauled line with water, caustic solution and kerosene.

The line has a rated capacity of 9000 barrels daily, using a single main line station near London in the East Texas field, and may be increased to 12,500 barrels daily by the addition of a station at Hearne, the midway point. The London station is equipped with two 300-horsepower convertible gas engines driving 8-stage centrifugal pumps through speed increasers.

In connection with Humble Pipe Line Company's East Texas-Baytown gasoline carrier, Hanlon Pipe Line Company, subsidiary of Hanlon, Buchanan, Inc., built early in 1936 about 40 miles of 6-inch welded line to transport natural gasoline from three plants in the north portion of the East Texas field to London, where deliveries are made to the former concern on consignment to Humble Oil & Refining Company.

Humble Pipe Line Company built last June a natural gasoline line, involving 21 miles of 4-inch and 7 miles of 3-inch welded pipe, from Humble Oil & Refining Company's natural gasoline plant in the Conroe field to Satsuma, where connection was made with the former's East Texas-Baytown natural gasoline carrier.

Magnolia Petroleum Company's 50-mile 3-inch gasoline carrier, extending from the company's refinery at Luling, Texas, to San Antonio, suspended operations in August, 1935, to permit recondition work on the entire unit due to exterior corrosion. This carrier was placed in service in April, 1930, and required overhauling within less than six years. After renovation and replacement of badly corroded sections, the line was again given a primer coat of paint followed by a thick application of cold enamel tar, then wrapped in asbestos paper and painted.

Empire Oil & Refining Company, Bartlesville, Okla., will start construction work shortly on a 14-mile 4-inch welded natural gasoline line to extend from the North Cowden field, Ector County, Texas, where the company is erecting a natural gasoline plant, to tank car loading facilities on the Texas & Pacific Railroad at Odessa, Texas.

American Liberty Pipe Line Company penetrated dense trees and underbrush in constructing the first independent oil line from East Texas to tidewater. The line was 107 miles long and consisted of eight-inch pipe, which completed a gap in previously existing carrier systems.

Texas Oil Line Capacity Increased

AMERICAN LIBERTY PIPE COMPANY, Dallas, began operating last May the first independent crude line to link the East Texas field with deep water facilities on the Texas coast. This concern acquired the facilities of Channel Transport and Marketing Company, owner of a 34-mile eight-inch line that was built in 1933 from the Conroe field to Norsworthy terminal on the Houston Ship Channel, and also Liberty Pipe Line Com-

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pany's 45.6-mile 8-inch carrier that was built in 1931 from the Kilgore section of the East Texas field to Rusk station, Cherokee County, where connection was made with Pure Transportation Company's Van-Smith's Bluff 10-inch trunk line.

Using these existing lines as a starter, American Liberty Pipe Line Company constructed 107 miles of 8-inch welded line between Rusk station and Conroe, and added three main line stations to supplement the three stations that served the old lines. The company has a rated capacity of 30,000 barrels daily from East Texas to Norsworthy terminal. The aggregate mileage of its gathering system in the East Texas field exceeds the length of its trunk line, as the company has absorbed gathering lines formerly operated as International Pipe Line Company, Associated Pipe Line Company, Bennett Pipe Line Company and Canadian-Pacific Pipe Line Company.

Humble Pipe Line Company began construction work July 27 on a 65-mile 8-inch crude line, extending from the Talco field, North East Texas, to a point near Longview, Texas, where connection will be made with a 10-inch carrier that now transports crude from the Van field to Standard Oil Company of Louisiana's refinery at Baton Rouge, La. This line is due to be completed and placed in service late in October, and is the only direct outlet in sight for the field. Bulk of the pipe required for the project was obtained through the abandonment of inactive screw-pipe loops on Standard Pipe Line Company's trunk line system near De-Queen, Arkansas. Humble Pipe Line Company is using its own field force in the laying of this line.

Gulf Refining Company, pipe line division, is preparing to start work immediately on the construction of a 55-mile 6-inch crude line from the Altus district, Southern Oklahoma, to Burkburnett, where connection will be made with the company's North Texas trunk line system. Oil to be run through this line has heretofore been transported via tank cars to Burkburnett.

Magnolia Pipe Line Company is now in its second year on a reconditioning program on some of its oldest pipe lines in Texas. Approximately 500 miles of trunk lines were renovated last summer and fall, and about the same number of miles will be worked over before the project is complete late this year.

Work was completed late last year on the reconditioning of 227 miles of 8-inch line between Luling and Beaumont, and recently several sections of the 8-inch carrier, extending southwest from Luling to the Mirando district have required rehabilitation and replacement of severely corroded joints.

The company has renovated two 8-inch units and a portion of a third between Corsicana and Beaumont, and in recent months has been working on these same lines between Corsicana and Fort Worth.

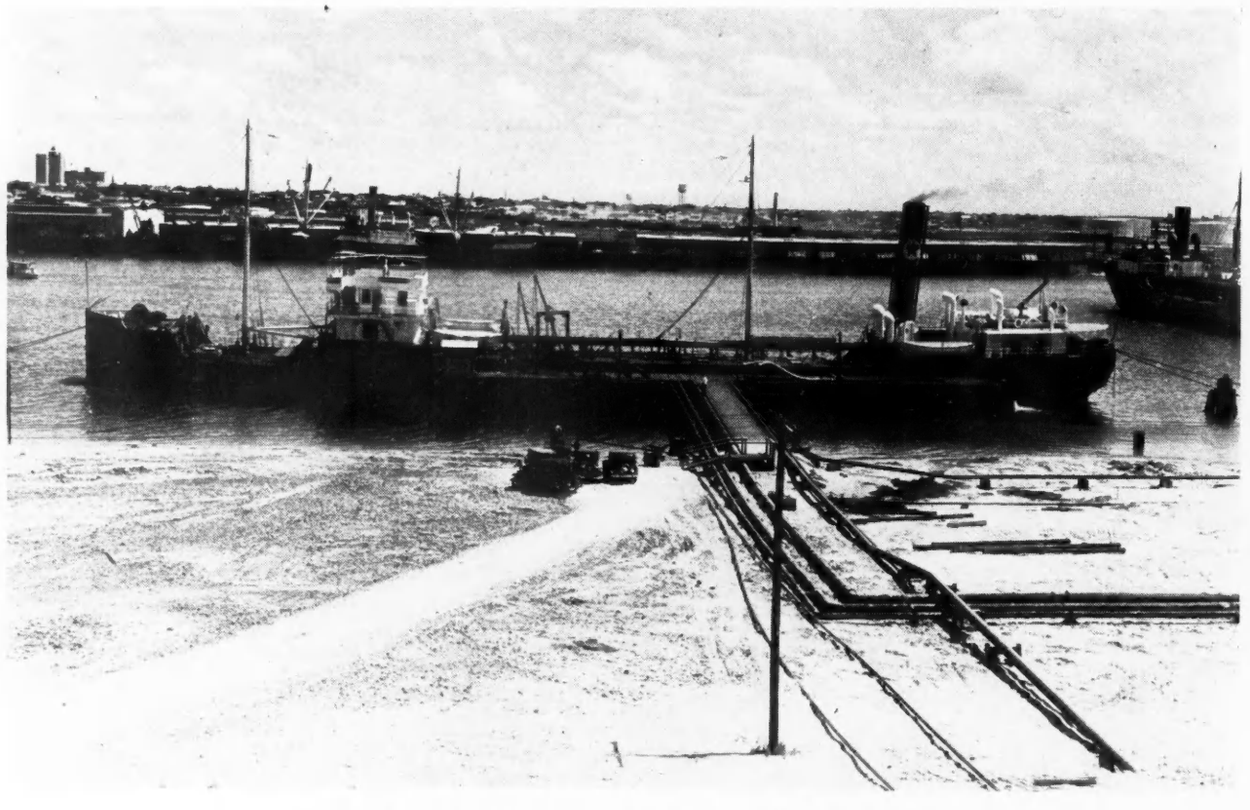
A combination 8- and 6-inch carrier between Electra and Bowie stations in North Texas is now being reconditioned.

Stanolind Pipe Line Company will resume reconditioning work shortly on its 8-inch trunk line between Ranger and Red River on the south line of Oklahoma, aggregating about 134½ miles. Within the past year the company renovated the 45-mile section between Ranger and Graford, and also 50 miles, extending north from Bowie station to Red River. About 49½ miles of the old line between Graford and Bowie stations will be reconditioned as soon as workmen, now engaged on another project in the Mountain States, are available.

Atlantic Pipe Line Company is reconditioning about 11 miles of its 6-inch and 8-inch parallel trunk lines, extending south from the Refugio area to its tanker loading terminal at Harbor Island, near Aransas Pass, Texas. About 10 miles of the south end of this dual system was renovated last summer because of excessive corrosion.

New Texas Gas Lines

LARGEST natural gas pipe line project completed in Texas within the past year consisted of 108 miles of 20-inch welded line built by Lone Star Gas Company from Irving junction, situated between Dallas and Fort Worth, thence southeast to the Cayuga and Long Lake fields, Anderson County. Construction contracts were awarded to the Oklahoma Contracting Corporation and Ford, Bacon & Davis, Inc., about August 1, 1935. Gas runs from the Cayuga field began December 1, and the line was completed to the Long Lake field early in 1936. Lone Star Gas Company entered the Long Lake field in December, 1934, with a 12-inch extension from its Central Texas system at a point near Waco, and upon the completion of the 20-inch carrier the two outlets were linked together to permit the routing of gas



Three tankers taking on cargoes of oil at Corpus Christi

through either outlet in the event of line breaks. No booster stations are required to move gas from either of the two Anderson County areas, as the gas wells afford rock pressures averaging about 2000 pounds.

Phillips Petroleum Company materially enlarged its supply of natural gas in the Texas Panhandle late in 1935 by constructing 23 miles of 24-inch welded line from its Sanford area natural gasoline and carbon black plants to the Sunray field, north central Moore County. The main line was completed in October, 1935, and has a rated capacity of 150,000,000 cubic feet daily. This carrier was placed in operation November 1, 1935, to comply with contract made with producers to purchase a minimum of 45,000,000 cubic feet daily on the above date. Construction of a field gathering system, originally embracing about 26 miles of 16-, 12-, 10- and 6-inch welded lines, was completed in January, 1936, but is being enlarged each month to take care of extension wells appearing on completions reports. No booster stations are required for the main line, or the gathering system, as these Moore County gas wells average above 400 pounds rock pressure.

The Texas Company, natural gasoline department, placed in operation on August 16, 1936, a new 30-mile six-inch welded natural gas line that extends from the company's natural gasoline plant on its Johnson ranch property in western Foard County, Texas, to the West Texas Utilities Company's electric power generating plant at Lake Pauline, located about 4 miles southeast of Quanah, Texas. This line is delivering about 5,000,000 cubic feet of residue gas daily on a 10-year contract to the power plant. The line was constructed by the White Deer Pipe Line Company.

Athens Natural Gas Company, Dallas, began construction work August 17, 1936, on a 16 mile 4½-inch natural gas line, extending from the Cayuga field, Anderson County, Texas, to Athens, Texas, where it will supply industrial plants with fuel. This line is due to be completed early in September. Fredell Construction Company was awarded contract to build the line.

Stanolind Oil & Gas Company is building about 8 miles of 6-inch welded line from the Dickinson field, Galveston County, Texas, to Texas City, where it will supply natural gas to the Pan-American Refining Corporation's refinery. The line is due to be in service before the close of August.

Empire Southern Service Company is nearing completion on the construction of an 8-mile 4-inch natural gas line extension from its system in the Big Spring, Texas, district to the town of Coahoma. Natural gas marketed by the company is produced in the Texas Panhandle.

Eight Lines to Tidewater in South Texas

EIGHT new pipe line outlets to deep water ports are resulting from the past year's building program in South Texas. Approximately 300 miles of construction is involved in the most far reaching campaign in the history of this district.

TABLE 1

Imports and Exports at Corpus Christi

		Barrels
Calendar Year 1934:		
Inbound	Crude	101,268
	Refined	404,842
	Total	506,110
Outbound	Crude	2,134,189
Calendar Year 1935:		
Inbound	Crude	132,660
	Refined	441,993
	Total	574,653
Outbound	Crude	4,580,516
	Refined	154,396
	Total	4,772,129
January 1, June 30, 1936:		
Inbound	Refined	247,265
Outbound	Crude	5,753,166
	Refined	18,963
	Total	5,772,129

Except for three lines, all construction was short but very important. Six of the lines have terminals at the deep water port at Corpus Christi, one to the new Port Isabel and the last to Port Lavaca.

The year, likewise, saw expansion of present systems through construction of new booster stations, repairs and replacement of lines extensions of already completed systems and several hundred miles of gathering systems.

Of far greater interest than the volume of construction is the fact that these lines tend to fill the blank spots in an already large pipe line net work over the country. Likewise, they open the way to numerous future extensions as new fields are developed.

These pipe line projects have kept pace with two other sources of development during the year — waterways and refineries. Port Isabel shipped its first tanker load of crude on October 20, 1935, and Corpus Christi further expanded its docking facilities and attracted new outlets. Refineries and refinery additions were constructed along these new ship channels, further increasing markets for crude.

Importance of these increased pipe line facilities to the deep water ports is further evidenced by the figures of exports and imports from the newer ports of this area. Table 1 shows imports and exports at Corpus Christi.

From the Port Isabel waterway, coastwise shipments of gasoline and fuel from October 20, 1935, to July 20, 1936, amounted to 692,362.47 barrels with crude oil 5798 barrels. Exports of crude oil to Italy during the same period amounted to 199,658.47 barrels.

The first major oil pipe line project from the Rio Grande Valley began running crude October 7, 1935, connecting the Samfordyce field to the Port Isabel waterway. This line was constructed by Valley Pipe Line Company and consists of 90 miles of 5½-inch pipe. Including storage at the field, two booster stations and other facilities, the project cost $325,000. The general district came to the fore in September, 1934, when the Samfordyce field was discovered. A great deal of wildcatting has been carried on since that time with several fields being opened. It is likely, therefore, that future pipe line work will result within the next year.

Coastal Refineries, Inc., constructed a 5000-barrel skimming and cracking plant at Port Isabel during 1935 and 1936. The company is now building a stabilizer at a cost of about $50,000 in order to make liquefied gasses. Port Terminal Company built a crude oil terminal at the port only a short distance from this refinery.

The Corpus Christi shipping facilities and pipe line construction campaign is the key feature of the year's work. Republic Pipe Line Company purchased a site and built a storage terminal at deep water. The Texas Company expanded its facilities, as did General American Tank, Terminal and Storage Company and Corpus Christi Refining Company. Southern Pipe Line Company also commenced construction of a terminal at Corpus Christi. Nearly 2,000,000 barrels of storage has been constructed or has been contracted to be built in this immediate area during the year.

Corpus Christi Refining Company is building a 5000-barrel refinery unit to increase its Corpus Christi plant to 8000 barrels. The plant was built in 1934 with 1000 barrels capacity, increased to 3000 barrels in 1935 and is being enlarged again. In addition, the company is constructing a vapor recovery plant and 330,000 barrels of storage.

Southern Pipe Line Company is constructing about seven miles of 6⅝-inch line, which is wrapped and treated with hot asphalt. The line will run from a gathering system in the 5800-foot Frio sand area of the Saxet field to Avery Point on the Corpus Christi ship channel where the company is building 206,000 barrels of storage at a new terminal.

In connection with the above projects, Nueces County Navigation District is commencing a dock on the Avery Point turning basin. From this dock, a 14-inch pipe line is to be constructed to the oil terminals. This project is part of the plan to expand the port facilities for the increased pipe line construction. Approximately 3,106,400 cubic yards will be dredged from the inner basin at Port Aransas, the channel extending from that point to Corpus Christi, the maneuvering basin and the turning basin at Corpus Christi, the industrial canal and the turning basin at Avery Point.

Potter Pipe Line Company has constructed a combination 6 and 8-inch line from the Saxet field gathering system to General American Tank, Terminal and Storage Company's plant, while Republic Pipe Line Company constructed a 4-inch line from the field to its terminal at the ship channel.

Two new lines were constructed from the Plymouth area in San Patricio County to the Corpus Christi port. Republic Pipe

Line Company constructed a 20-mile 5-inch main with one pump station. Sinton Pipe Line Company, which is associated with The Texas Pipe Line Company, built a 17½-mile 8-inch line. This line was further extended 16 miles from the Plymouth field to Refugio, where it tied into The Texas Pipe Line Company's 8-inch line to the Greta field.

The longest line into the Corpus Christi port during the year was Crude Oil Pipe Line Company's project from the Loma Novia field. The line, constructed of 5½-inch pipe, is 75 miles long. It is the first independent line to be constructed from the prolific Duval County fields to tidewater. Since construction, the line has been extended to include several other Duval County producing areas.

Barnsdall Pipe Line Company built two 3-inch welded lines a distance of 13 miles from the Placedo in Victoria County to Wood-Moore Corporation Refinery at Port Lavaca. The oil is then handled by barges through the waterway to Corpus Christi, where it is loaded for export. This line may be the key to further development along this line in the construction of short lines to barge landings along the coast. Under this plan, crude would be barged to the ports where the larger tankers can be docked.

Both United Gas System and Texas Gas Utilities Company replaced considerable pipe in their South Texas gas lines. Much of the work by the former company was in the Calliham sector of the Bruni-San Antonio line. Magnolia Pipe Line Company also accounted for considerable reconstruction work.

Among the smaller pipe line projects were connections from the Mauritz field to main trunk line, small line out of the Tomoconnor field, Magnolia Pipe Line Company connection to the Lopez field, Southwest Gas Company line from Fordtran gas field to Yoakum, small gas line out of Samfordyce field to several irrigation pump stations, gathering lines out of the several newer fields to loading racks, Amerada Petroleum Corporation's 9-mile line across a portion of its Pearsall properties to railroad loading rack at Melon, and extensions to the South Darst Creek and Zoboroski fields.

A number of miles of gathering system was constructed in the immediate Government Wells area, where the main drilling activity was witnessed during the year. Several companies, mainly Humble Pipe Line Company and Magnolia Pipe Line Company, entered the Loma Novia field with lines. Latter company has connections into the Seven Sisters field. Humble Pipe Line Company erected one new pump station and Magnolia Pipe Line Company built two pump stations on their lines out of the Mirando district to increase capacities.

Two New Mexico Oil Lines

SHELL PIPE LINE CORPORATION began construction work early this year on a 41-mile 10-inch extension to the north from its booster station and tank farm near the Hendrick field, Winkler County, Texas, to the Eunice district, Lea County, N. M., where connection was made with the company's 22-mile 8-inch stub line that was built in 1930 to deliver crude from the Hobbs field to The Texas Pipe Line Company. Shell Pipe Line Corporation placed the connecting unit in operation February 26, and it has a rated capacity of 30,000 barrels daily.

Gulf Refining Company, pipe line division, completed construction work late in March, 1936, on a 57½-mile 8-inch crude line extension to the north of its booster station and tank farm in the Hendrick field, Winkler County, Texas, to the Monument field, New Mexico. Gathering system was installed in the latter field, and an extension was built into the Cooper field, but the line was not placed in operation until June 1.

Rodessa Outlets Feature Louisiana

ALL pipe line construction in North Louisiana during the 12 months ending August 1, 1936, was confined to the Rodessa field.

Standard Pipe Line Company laid 8.89 miles of eight-inch screwed line from its Ida pumping station to Rodessa, 16.37 miles of four-inch screwed line in the field and 0.85 of a mile of two-inch line in the field.

Anding Oil Refining Company constructed 18,000 feet of six-inch screwed line in the field.

Caddo Pipe Line Company put in 10,000 feet of two-, three-, and four-inch line from its pumping station in south Rodessa to various parts of the field.

Gulf Pipe Line Company laid 31 miles of six-inch line from its Potter Station in East Texas to Rodessa, all on the Texas side of the field, with a four-inch gathering system of several miles to various leases, practically all in Cass County, Texas.

East Texas Pipe Line Company laid 57 miles of eight-inch welded line from Longview, Texas, to the Rodessa field. This was later acquired by W. F. Hartwig, an official of United Gas Public Service Company.

Texas Pipe Line Company laid 23 miles of six-inch screwed line from Oil City, Louisiana, to Rodessa, with eight miles of gathering lines in the field.

Magnolia Pipe Line Company laid 20 miles of welded line from Dixie, Caddo Parish, to Rodessa, and 30 miles of four- and six-inch gathering lines in the field.

Shoreline Oil Company (The Leonard Company) laid 16 miles of four-inch screwed line from Lewis to Rodessa and points in the field.

Arkansas Pipe Line Company (Cities Service) laid 9.5 miles of six- and eight-inch welded line and 1.25 miles of 10-inch line, most of it from its Mills compressor station to the Rodessa field.

Root Refining Company and Lion Oil Refining Company of El Dorado, Arkansas, are planning the construction of a 24,000,000 gallon per year capacity gasoline line from their refineries at El Dorado to the Ouachita River. This will be used to transport products by barge for distribution along the Mississippi and Ohio Rivers and the Gulf of Mexico.

Another gasoline line that will transverse this district, if built, is the proposed gasoline by East Texas Refining Company from its refinery at Longview in the East Texas field via Rodessa to Natchez, Mississippi. The cost of such a line would be approximately $1,500,000.

In Louisiana Gulf Coast, Continental Oil Company laid oil and gas lines from Tepetate in Acadia Parish to the Calcasieu River at Lake Charles, approximately 50 miles in distance. The oil line was six inches in size while the gas line was eight inches. The lines paralleled each other and were welded and laid in one ditch. The operators abandoned a four-inch line which was constructed when the discovery well came in at Tepetate. The four-inch line was from the field to the terminal at Millerville on Bayou Nezpique.

The Texas Pipe Line Company laid a six-inch line from the Lafitte field, Jefferson Parish, to Amesville terminal on the Mississippi River. The same operators laid a six-inch line from the Garden Island field, Plaquemines Parish, to Pilot Point on the Mississippi River, a distance of approximately 10 miles. The Texas Pipe Line Company salvaged their six-inch line from Vinton field, Calcasieu Parish, to Orange, Texas, which crossed the Neches River.

Union Sulphur Company constructed a six-inch welded line approximately 14 miles from the Gillis field, Calcasieu Parish, to the Ross Bluff terminal on the Calcasieu River.

A small amount of new construction, looping and reconditioning pipe was done by United Gas Company, Shell Pipe Line Company, Pure Oil Company, Canal Oil Company, Herton Oil Company, Gulf Refining Company and Magnolia Pipe Line Company.

Two California Lines Underway

AT this time, two major pipe line projects are in process of construction in California, one of which is the largest pipe line job for the state in several years. Rumors are current that other lines are to be built to deep water.

The larger undertaking in California is the building of a main line from San Joaquin Valley to Martinez by Shell Oil Company. Construction work is in progress and ahead of schedule, which calls for a total of 304 miles of lateral, main and field gathering lines.

Shell Oil Company's main line consists of 260 miles of line ranging from 10¾-inch to 12-inch, with a daily capacity of close to 40,000 barrels. Although no announcement has come from the company, it is understood only four pumping stations will be built, and the possible pressure will range from 800 to 1000 pounds.

A number of feeder lines and gathering lines are to be built connecting Kettleman Hills, and other San Joaquin Valley fields with the main line which will have its terminus at the company's Martinez refinery. The feeder lines will be mostly six-inch.

The pipe line project calls for a total expenditure of close to $4,500,000, much of which goes to labor. Shipments to total approximately 26,000 tons of steel pipe are being received as needed. It will be necessary to bury the pipe under Kern River. In the San Joaquin Valley, the summer heat is intense, and pipe line crews are forced to bury the line at night and early morning. The 40-foot sections are welded and laid into the trench in 200-foot lengths. Horizontal boring machines are being used to pass under highways and railroads.

At the junction of the feeder lines from Ten Section, Poso, Round Mountain and Mountain View fields, with the main line, 68,000-barrrel steel tanks with a combined capacity of about 500,000 barrels are being placed.

The second pipe line project of importance under way in California at this time, is the start of construction of close to 80 miles of 10-inch line

"and Miss Frances,

pack my

COMPOSITE CATALOG

I'll be using it

constantly"*

* Instructions of an oil executive leaving on an extensive field trip.

COMPOSITE CATALOG of OIL FIELD and PIPE LINE EQUIPMENT

from Kettleman Hills to Estero Bay in San Luis Obispo County by Valley Pipe Line Company, formed jointly by The Texas Company and Seaboard Oil Company (Milham interests).

Contract for this line was awarded in May and it is now nearing completion. Only two pump stations are needed, and 2500 feet of submarine line for loading tankers is part of the project. At the terminus, steel storage with a total capacity of 118,000 barrels is being erected.

East of Mississippi

That part of the United States lying east of the Mississippi River received one important oil line, one important gasoline line and one important gas line during the past 12 monts, in addition to several shorter gas and oil lines in Michigan.

The oil line was Michigan-Toledo Pipe Line Company's 140-mile eight-inch system from the Crystal field in Michigan to Toledo, Ohio. This gave the state its first interstate crude oil carrier, and as such ranks high in importance. The line was constructed from October 1, 1935, to January 29, 1936, and was placed in operation February 15. With only one station at Crystal, the line has a capacity of 12,000 barrels daily, but this may be enlarged materially by installation of booster stations whenever desired. Parts of the line were factory-coated to resist corrosion in the hot spots. Michigan-Toledo Pipe Line Company is owned jointly by Simrall Pipe Line Company of Mt. Pleasant and Standard Oil Company of Ohio.

Outstanding among gas line construction in the United States was the laying of a 231-mile 22-inch main from Zionsville, Indiana, to Detroit, Michigan, by Panhandle Eastern Pipe Line Company. Completion of this project made Texas Panhandle gas available to Detroit consumers through a 1575-mile system. The new portion of the line has a delivery capacity of 125,000,000 cubic feet of gas. The line was built and will be operated by Michigan Gas Transmission Corporation, a subsidiary of Columbia Gas & Electric Company, as is Panhandle Eastern Pipe Line Company, to whose system the new line connected.

The important gasoline carrier laid in this district was Keystone Pipe Line Company's 177-mile eight-inch trunk system from its Mechanicsburg terminal, near Carlisle, Pennsylvania, to Pittsburgh. Upon completion of this line, the company constructed a branch from Murrysville via Duquesne to the Hays community south of Pittsburgh, a distance of 16½ miles. This work was completed the middle of December, 1935. Early in August of this year the company, which is a subsidiary of Atlantic Refining Company, announced it would make further extensions to the system. A 75-mile eight-inch branch lne is to be laid from its Quentin station, near Cornwall, via Sunbury to Williamsport, Pennsylvania. This new branch will be completed before the end of the current year.

Penn-York Natural Gas Corporation, unit of Cities Service Company, is preparing to expand its natural gas transmission facilities in northwestern Pennsylvania and western New York. A total of 139 miles of trunk lines are to be laid immediately. This will consist of 60 miles of 10-inch welded line from Harrison Township Pennsylvania, in a northwestern direction to Arcade Center, in Western Young County, New York. From the latter point 44 miles of eight-inch line will be built in a westerly direction, then 35 miles of similar sized pipe will be laid in a northwestern direction. The company also is reported to be contemplating construction of a 110-mile 12-inch line in northwestern New York.

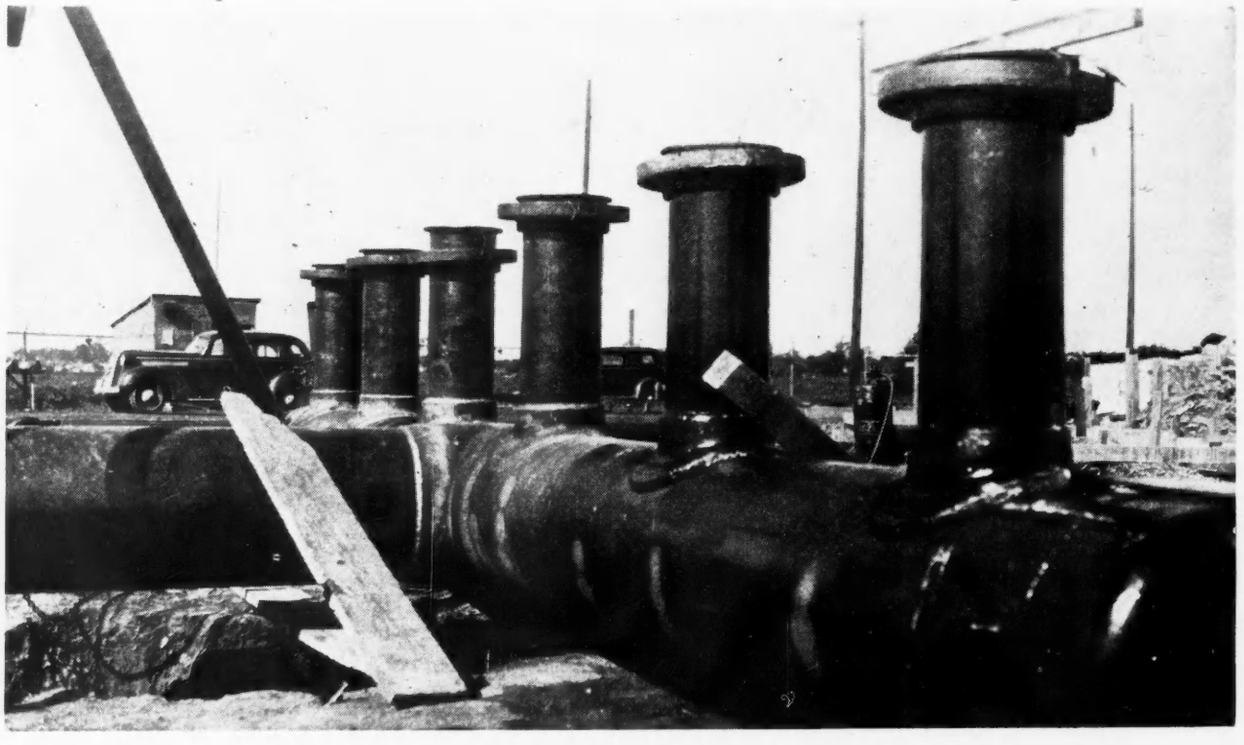
Two important gas lines were laid in Michigan by Consumers Power Company. One was an eight-inch carrier from the Broomfield pool to Milwaukee, Saginaw and Bay City, a distance of 70 miles. The other ran from the Belvidere-Millbrook field to Lansing, and was a 10-inch 70-mile system.

Rocky Mountain Gas Line

An important gas line was constructed during the past 12 months in the Rocky Mountain area of the United States. North Central Gas Company laid 127 miles of line from Clayton, Wyoming, to Lewellen, Nebraska. It was composed of 12½-inch, 10-inch, 8-inch, 6-inch, 4-inch and 3-inch pipe. The larger sizes of pipe were laid at the starting point in Wyoming and the line gradually reduced in size as various consumption centers were passed. This company had been using Stanolind Pipe Line Company's old Teapot Dome to Freeman, Missouri, line for distributing its gas, but Stanolind company decided to again use its line for carrying oil.

A short but important oil line is to be laid in Wyoming. It will be laid by Illinois Pipe Line Company, subsidiary of Standard Oil Company of Indiana, from the Lance Creek field to Stanolind Pipe Line Company's Teapot Dome to Freeman, Missouri, line. A 6-inch line 40-mile long will connect with the system at Fort Laramie, and will make it possible to transport Lance Creek oil to either the Atlantic seaboard or the Gulf of Mexico at Houston. It will have a capacity of about 5000 barrels daily.

Header on Michigan Gas Transmission Corporation's 22-inch line at the point where gas from the Texas Panhandle will enter Detroit



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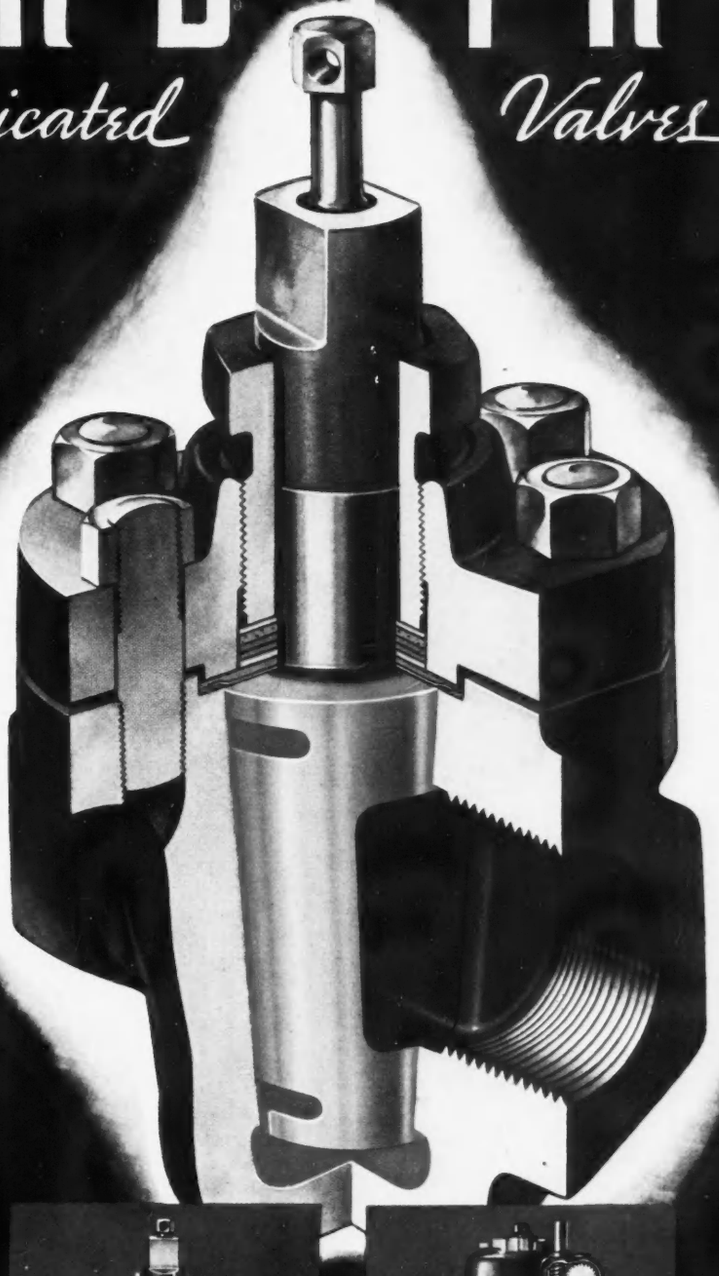

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Round Opening
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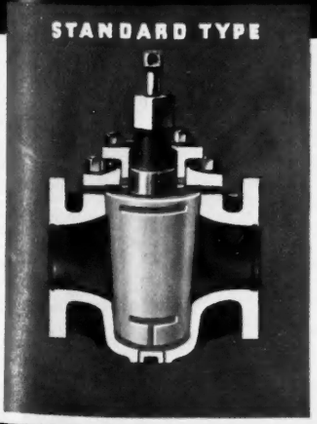

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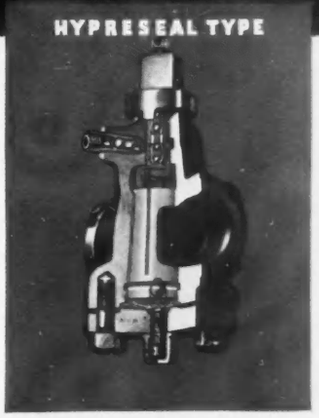

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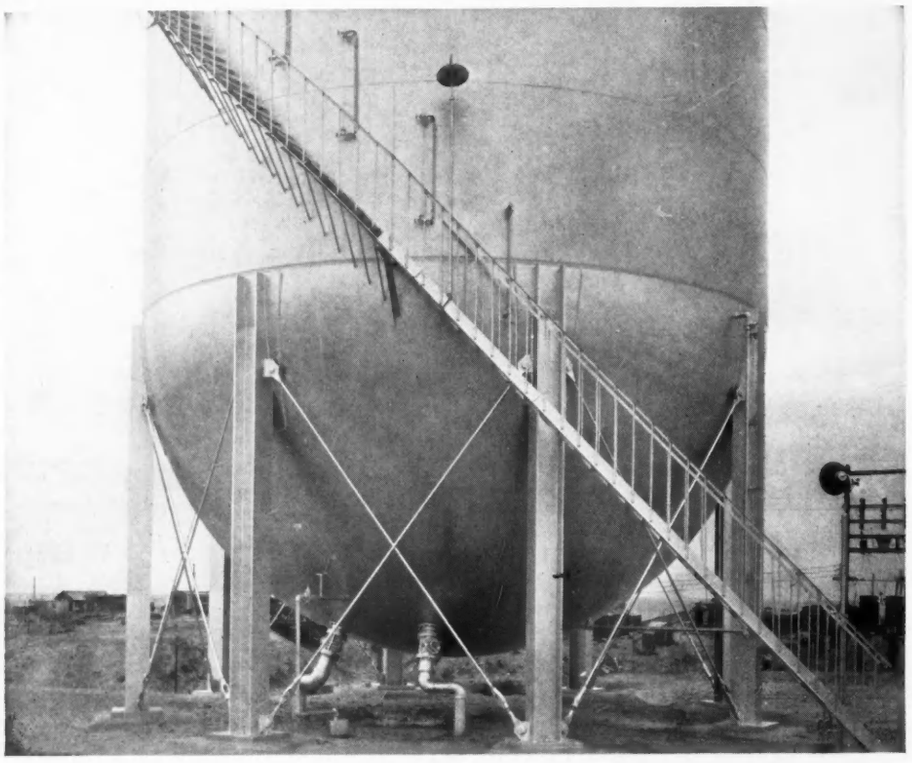

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VIEWS:

●

TOP PHOTO

Butane storage tank in a Texas refinery equipped with 8" Nordstroms on suction and discharge lines.

●

CENTER PHOTO

Horizontal settling tank and towers in Texas—equipped with 4" and 6" Nordstroms.

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LOWER PHOTO

Nordstrom Valves, 4", on outlet lines to pipe line station at Cooper, New Mexico.

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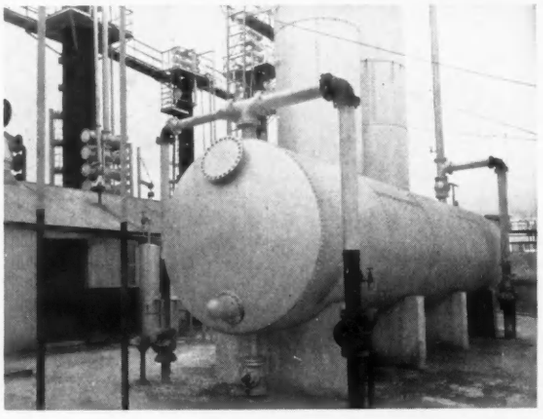

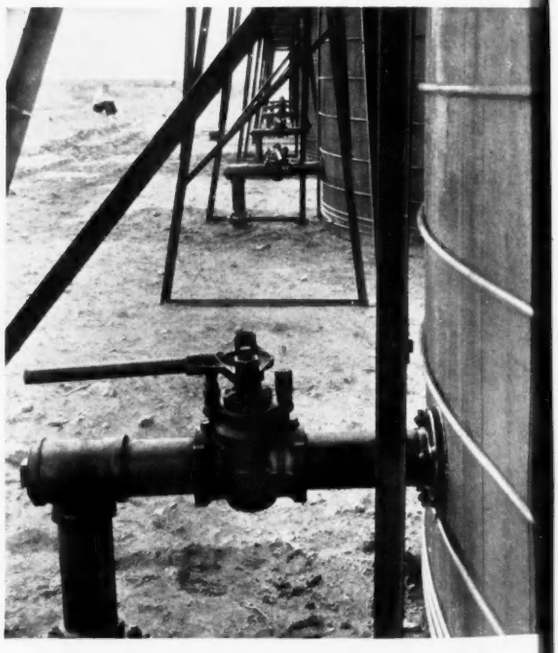

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Major Pipe Line Systems

DEVELOPMENT OF THIS BRANCH OF THE INDUSTRY HAS BEEN RAPID AND FORMS INTERESTING CHAPTER IN ITS HISTORY

SINCE 1879, when the first real trunk oil line was laid from western Pennsylvania to the Atlantic seaboard, there has been built up in the United States a great crude oil pipe line transportation system. Prior to this time a number of small lines had been constructed. They were of the type, however, that would be classified today as gathering lines. As the producing districts of West Virginia and eastern Kentucky were developed, and as new fields were opened in Ohio, Indiana and Illinois, the trunk pipe line systems were extended to these area, and new lines were laid from these fields to newly constructed refineries.

When oil became plentiful in the Mid-Continent area, and as production declined in the earlier Eastern fields, refineries had to look to Oklahoma, Kansas, Texas and adjoining states for additional petroleum supplies. So, in time, the eastern pipe line systems were connected with new lines laid in the Mid-Continent. Thus the pipe lines of the United States grew to form a great transportation unit, and are continuing to grow today as new fields are opened.

At present it is estimated that there are more than 115,000 miles of trunk pipe lines in the United States representing an investment of $800,000,000 to $1,000,000,000.

Move Oil, Natural Gas and Gasoline

After the pipe line had proved itself an efficient means of transporting crude oil from the producing fields to the ever hungry stills at the refineries, it was adopted as a means of moving natural gas to large consumption centers. Today, natural gas lines form another great network of lines that supply the business and population of the country with an unfailing supply of cheap natural fuel.

In more recent years, the pipe line has been adopted to move gasoline from the refineries to consuming centers. Several large lines have been built and today are working as satisfactorily as their forefathers.

Behind this vast network of pipe lines lies a story of great service to the American people. Difficulties in the way of engineering problems and hardships of laying and maintaining these pipe line systems over such great distances are every day obstacles for the pipe line departments. When a new well is drilled in, pipe line men must work night and day to reach the site. By fast work a gang can lay three miles of pipe per day. But after the pipe line is laid the department's work is not over. The lines must be patrolled daily. Gaugers must keep accurate check of the number of barrels pumped through the lines, while others keep check on the number of barrels received at the point of destination. Strings of private telephone and telegraph stations are maintained along the route of all pipe lines. All oil is dispatched on schedule, just as are railroad trains.

The following pages form a section devoted to brief biographical sketches of many of the major oil pipe line companies that constitute such an important and vital link in modern industry of all kinds. The histories of these companies illustrate the rapid expansion of pipe line systems to connect all producing areas with facilities for moving crude oil to the refineries.

★

Ajax Pipe Line Company

IT FORMS AN IMPORTANT LINK BETWEEN MID-CONTINENT AND EASTERN PIPE LINE SYSTEMS

AJAX PIPE LINE COMPANY was incorporated under the laws of Delaware March, 1930. General offices were established in Tulsa; moved to Springfield, Missouri, January, 1930, to Muskogee, Oklahoma, January, 1933, and back to Tulsa in July, 1933.

The original construction plans called for the laying of approximately 790 miles of 10-inch pipe and the erection of 9 pumping stations, with an all-year capacity of 65,000 barrels per day, as a connecting link in a system of trunk lines. The system was put in service November 24, 1930.

The pipe line construction consisted of laying 2 parallel 10-inch pipe lines in a northeast direction from Oklahoma Pipe Line Company's Glenn Pool pumping station, 10 miles south of Tulsa, through the Oklahoma Flint Hills and the Missouri Ozarks, to Illinois Pipe Line Company's Wood River pumping station, 30 miles north of St. Louis, Missouri.

Numerous stream crossings were encountered, five being classified as major, requiring supervision of men experienced in this type of work and are as follows:

1. Arkansas River in Oklahoma; 2. Grand River in Oklahoma; 3. Gasconde River in Missouri; 4. Missouri River in Missouri; and 5. Mississippi River in Missouri and Illinois.

The pipe is all 10¾-inch O.D., Grade "A" lap weld and ⅜-inch wall thickness, with the exception of the 5 major rivers, which is ½-inch wall thickness, with 74-percent, 20 foot, random length and the balance 40 foot random length, joined together by welding and given a bituminous, asbestos felt-wrapped coating. During the peak of construction, pipe was received from the mills at the rate of 18 miles per day and 18 gangs were employed in the laying. An outstanding feature was, not a single day was lost due to weather conditions.

The construction of the 9 pumping stations progressed as rapidly as the pipe line, each station having 3 500-horsepower Diesel engine-driven pumping units, with all necessary appurtenances and cottages for operating personnel. Two of the units are required to meet operating conditions and the third unit to insure continuous operation.

Navigable streams, such as the Missouri and Mississippi rivers, have proven to be the major operation and maintenance problem. The insurance of year-round navigation has caused the construction of jetties and a great amount of dredging, which in high water seasons, seem to accelerate the hazards. Line breaks have occurred in both rivers during the high waters of the past two years. In order to insure continuous operation, it was deemed

advisable to lay a third pipe line. The Missouri river crossing was completed in 1935 and the Mississippi river crossing is in progress.

At the close of 1935 the system had been operated 5 years at an average of 85 to 90 percent of its rated capacity.

The present main officials are as follows: W. R. Finney, president; J. R. Doles, vice president and general superintendent; S. V. Kane, treasurer; and C. L. Bushnell, secretary.

RALPH P. PADEN
General Superintendent, Atlantic Pipe Line Company

★

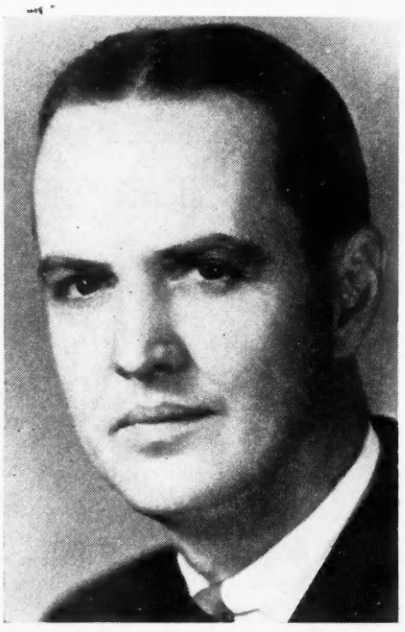
Atlantic Pipe Line Company

ITS FIRST LINE WAS LAID DURING 1927 IN WEST TEXAS AND NOW OPERATES OVER 1200 MILES

ATLANTIC PIPE LINE COMPANY was organized in December, 1927. The first line laid by this company was 71 miles of 10-inch pipe from Wink to Midland, Texas. Construction began on this line the latter part of 1927 and it was placed in operation early in 1928. Gathering facilities in the Winkler field, as well as tank farms at Winkler and at Midland, which formerly were operated by the pipe line department of Atlantic Oil Producing Company were acquired by the newly organized company after completion of this first line.

During 1928 a 10-inch main line, 510 miles in length, was constructed from Midland to Atreco Terminal on the Neches River near Port Arthur, Texas.

During the next few years, gathering and trunk line facilities were acquired in Coleman, Refugio and Chambers Counties, as well as Gulf terminal facilities at Harbor Island and Texas City.



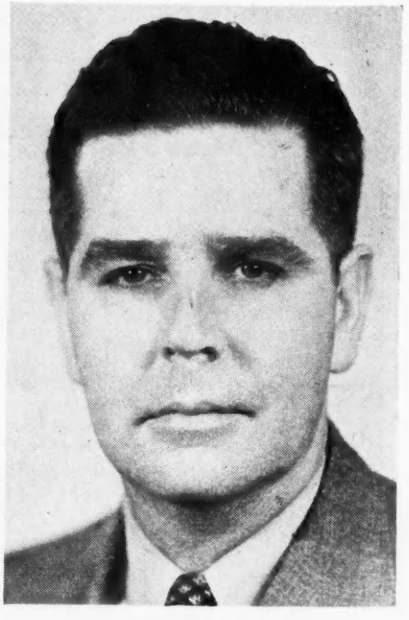
J. HARRY WOOD
Vice President and General Manager, Atlantic Pipe Line Company

J. W. VAN DYKE
President, Atlantic Pipe Line Company

The company entered the East Texas field in 1931 and after installing a gathering system, constructed a main 10-inch line from the Longview area to the Atreco Terminal, approximately 181 miles.

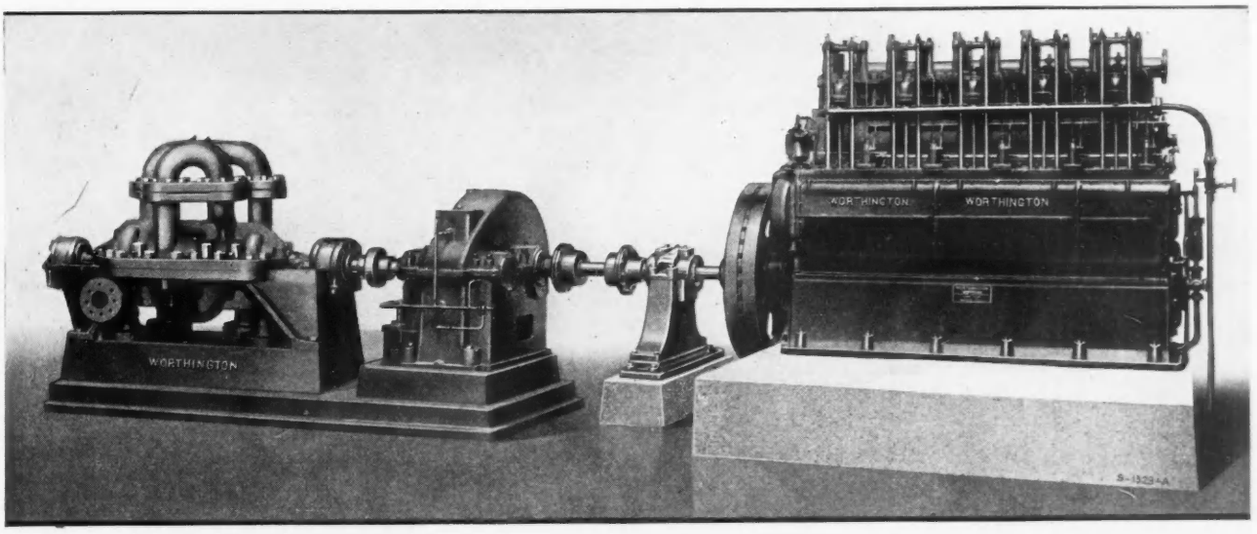
As of December 31, 1935, this company was operating 403 miles of gathering lines and 986 miles of trunk lines, the latter consisting of 888 miles of main trunk lines and 98 miles of parallel and other lines.

The officers of the company are as follows: J. W. Van Dyke, president; L. M. Goldsmith, vice president; Robert C. Tuttle, vice president; J. H. Wood, Jr., vice president and general manager; B. G. McKain, secretary; V. L. Elliott, comptroller; Robert H. Colley, treasurer; R. P. Paden, general superintendent; and J. W. Williams, chief engineer.



J. W. WILLIAMS
Chief Engineer, Atlantic Pipe Line Company

WORTHINGTON DIESEL-ENGINE-DRIVEN CENTRIFUGAL OIL LINE PUMPS...



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A-36351

Continental Pipe Line Company

PIPE LINE SYSTEM CONSISTS ESSENTIALLY OF GATHERING LINES FOR ITS SEVERAL REFINERIES

CONTINENTAL Pipe Line Company's system consists essentially of gathering systems for Continental Oil Company refineries. Since the lines are for delivering crude oil to these manufacturing plants, they do not comprise an interstate system for the general movement of crude oil.

These lines converge into the refining plant at Ponca City, the plant at Wichita Falls, at Florence and Denver, Colorado, at Glenrock, Wyoming, and at Torrington, New Mexico.

A line recently completed, Tepetate, Louisiana, to a loading point on the Calcasieu River, near Lake Charles, serves for loading tanker shipments from the lower Louisiana area.

The Continental pipe line system had its beginning as Kay County Gas Company, and the first line was but a few miles in length from the old South Ponca field to the Ponca City refining plant of Marland Refining Company. This concern was changed to Marland Pipe Line Company in 1924. Previous to the change in name the gathering system had been enlarged by extensions into the fields of Osage County to the east and an eastern line to the Tonkawa and Garber fields to the west.

Since then a system has been extended into Kansas and another line south to the Oklahoma City field. The line to Oklahoma City was built following the development of that pool in 1930.

The Kansas trunk line is 200 miles long. The lines to Oklahoma City and to the fields in Osage County are each 100 miles long, while the one to Tonkawa and Garber is 60 miles long.

Merger of Continental Oil Company and Marland Oil Company in 1928 added the Wichita Falls gathering system to the department. These lines were built by Texhoma Oil & Refining Company following development of the Burkburnett pool in 1918. Later this concern was sold to Continental Oil Company.

The 150-mile line from Craig, Colorado, to the Denver plant was built in 1930. It has gathering facilities. The lines from the Florence field to the plant at Florence, Colorado, are not operating at present. The New Mexico lines connect the production of the Framington field with the refinery at that point. The line for the Glenrock plant extends but a few miles west to the Big Muddy field, Wyoming.

The new Louisiana line from the Tepetate field extends 50 miles to loading facilities on the Calcasieu River.

In all Continental Oil Company has 2000 miles of trunk lines and gathering systems.

Dan Moran is president, J. G. Dyer is general manager, E. O. Bennett is assistant manager, W. L. Kygar is assistant to the manager and A. C. Wilkinson is superintendent.

J. G. DYER
Vice President and General Manager, Continental Pipe Line Company

E. O. BENNETT
Assistant Manager, Continental Oil Company, pipe line department

★

Cosden Pipe Line Company

TRANSPORTS ONLY HIGH GRAVITY PARAFFIN BASE OIL

COSDEN Pipe Line Company's history is linked closely with that of Mid-Continent Petroleum Corporation. The company was organized in 1913 as the pipe line division of Cosden and Company. When Cosden and Company became Mid-Continent Petroleum Corporation in 1825, Cosden Pipe Line Company continued under its own name as a subsidiary.

A network of 1400 miles of pipe lines centers at Mid-Continent Petroleum Corporation's big refinery in West Tulsa. In 1913, the company owned 25 miles of 3-and 4-inch pipe to the Inola field. This line was purchased outright from Gladys Belle Oil Company, and has since been removed from the ground.

In 1913-14, the company put 6-inch lines into the Drumright and Cushing fields. Extensions also were made into the Bixby and Cole fields. The first line to Osage County was laid in the spring of 1919, when a 6-inch line was laid as far as Hominy. Later this line was extended to the Burbank field, and the Drumright line was carried as far west as Garber. In 1920, Cosden Pipe Line Company's Bixby line ran to Beggs. The latest big extensions have been to Cromwell and Seminole fields.

Reconditioning work has resulted in some of the lines being increased to 8 and 10-inches in diameter.

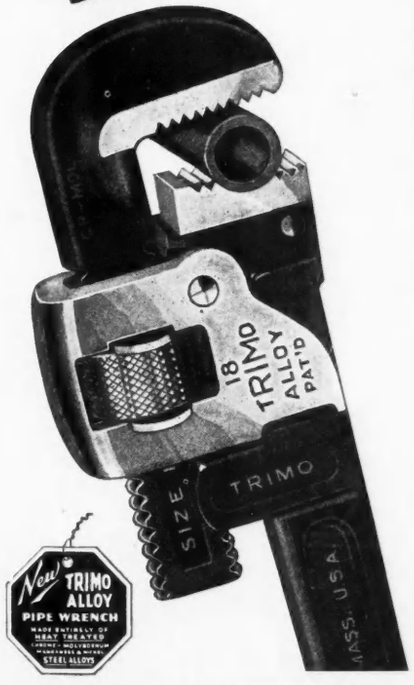
The 1400 miles of pipe are capable of bringing 1000 barrels of oil to the refinery every hour. During a recent 48-hour period, 48,000 barrels were actually pumped into West Tulsa. Only high gravity 100 percent paraffin base crude oil is purchased.

Tank farm storage facilities for many thousands of barrels of crude are maintained by the company. Storage tanks at Hominy have a capacity of 500,000 barrels; Burbank 600,000; Drumright 500,000; and at the Seminole, Cromwell and Bad Creek farms a million barrels may be stored.

The pipe line system is divided into 4 field districts with a foreman over

IN TIGHT SPOTS

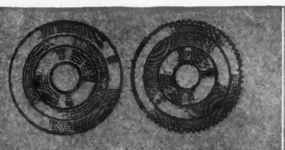
FOR A TIGHT GRIP USE TRIMO



TRIMO'S the wrench to use in the tight spots—when men's safety and company profits may depend on the way a pipe wrench takes hold.

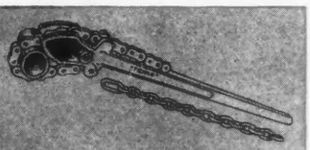
TRIMO grips hard—on any job. Made throughout of Chrome Molybdenum Nickel Alloy Steel. TRIMO is the most durable pipe wrench known. Handle is drop forged steel.

Look for the Red Tag—attached to every TRIMO—identifying the safest, strongest, most economical Pipe Wrench offered in the oil fields.



TRICROME CUTTER WHEELS

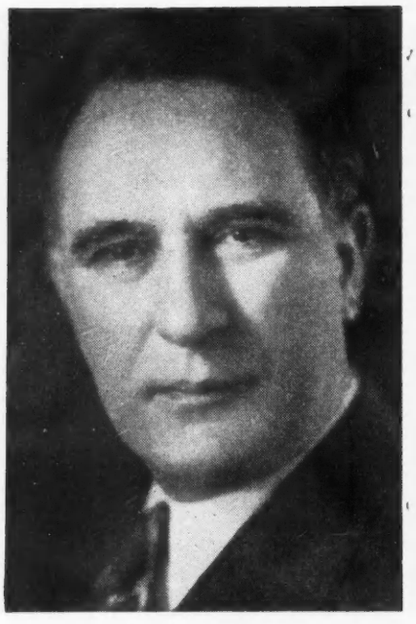
Thin blade special analysis steel—silvered to resist rust. Identified by red hub.



TRIMO CHAIN WRENCH

Replaceable parts, quality steel make this giant chain wrench safest and most serviceable.

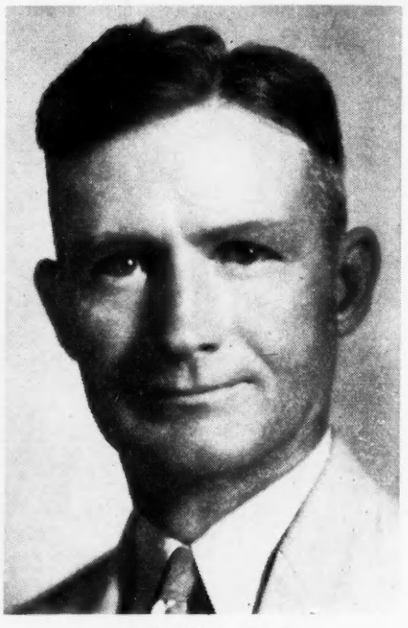
TRIMONT MFG. CO., INC.
ROXBURY (BOSTON), MASS.



JACOB FRANCE
President,
Cosden Pipe Line Company

—Blank & Stoller

J. C. DENTON
Vice President,
Cosden Pipe Line Company



J. A. BEYHAN
General Manager,
Cosden Pipe Line Company

each district. These district managers are in constant touch with the main office by telegraph and telephone, and report in person twice a month at the Tulsa office. They supervise maintenance in areas approximately 40 miles square.

There are approximately 300 employees in all departments of Mid-continent Petroleum Company's pipe line subsidiary, and of this number more than 50 are in the general offices in Tulsa. Jacob France, president of Mid-Continent Petroleum Corporation, also is president of Cosden Pipe Line Company. J. C. Denton, a vice president of Mid-Continent Petroleum Corporation, likewise is vice president of the pipe line company. J. A. (Jack) Beyhand, associated with Cosden Pipe Company since 1919, was made general manager of the company in July, 1934. S. I. Ford and J. M. Linehan are the company's division superintendents.

★

Empire Pipe Line Company

HAS HAD STEADY EXPANSION SINCE ORGANIZED IN 1916

EMPIRE Pipeline Company was organized in 1916, when Empire Gas & Fuel Company took over the following companies: American Refining Company at Okmulgee, Oklahoma, with lines gathering oil in the old Morris, Leonard, and Booch fields; Cushing and Peerless Refineries; Ponca Refining Company, Ponca City, Oklahoma, with a 4-inch line between Ponca and Cushing, via Burbank; Producers Refining Company, at Gainesville, Texas, with an 8-inch line from the Healdton, Oklahoma field.

In the same year, an 8-inch line was built from the newly opened El Dorado and Augusta fields of Kansas, via Ponca City, and a point near Guthrie, Oklahoma, to Cushing. This particular route near Guthrie was chosen with the idea of extending to Oklahoma City, where a small refinery had been recently purchased. This extension was not made, however, until over 12 years later, when the Oklahoma City field came in.

In 1918, Empire Pipeline Company took over operation of the gathering system of Standard Asphalt & Refining Company at Independence which served the shallow fields of Bartlesville-Nowata area.

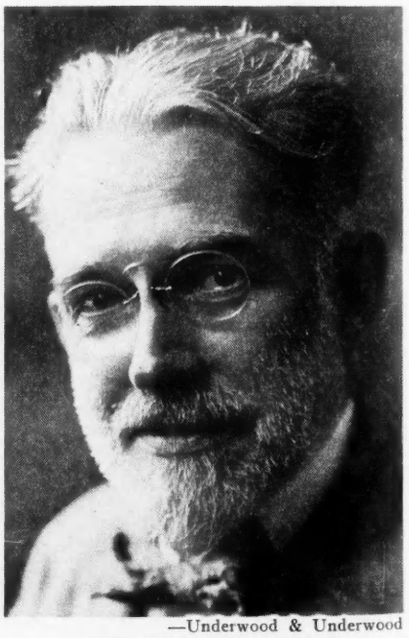
The next year a 6-inch extension was made to the Garber-Billings field of Oklahoma.

When the Duncan, Oklahoma, field was opened in 1919, a 4-inch line was laid to Waurika, Oklahoma, and an 8-inch line was also laid jointly with The Texas Pipe Line Company from Healdton, Oklahoma to Burkburnett, Texas. These lines were reclaimed several years ago.

In 1921, a 6-inch line was built from the Kingwood pool, near Henryetta, Oklahoma, to Cushing, and a 4-inch line was built from Kingwood to Okmulgee.

In 1923 a 4-inch line was added from El Dorado, Kansas, to the Greenwood County production in the Teter and Madison pools, and the same year a 6-inch line was built into the Tonkawa, Oklahoma field.

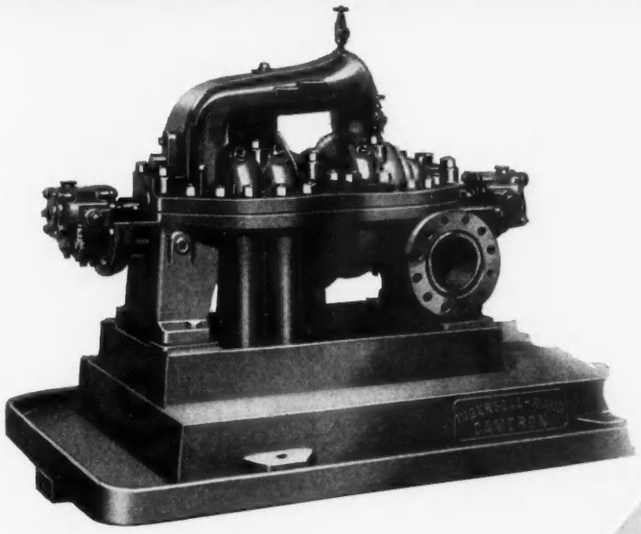
A 6-inch line was built to connect existing lines in the Kingwood field when Seminole became productive, fol-



—Underwood & Underwood

HENRY L. DOHERTY
President, Empire Pipe Line Company

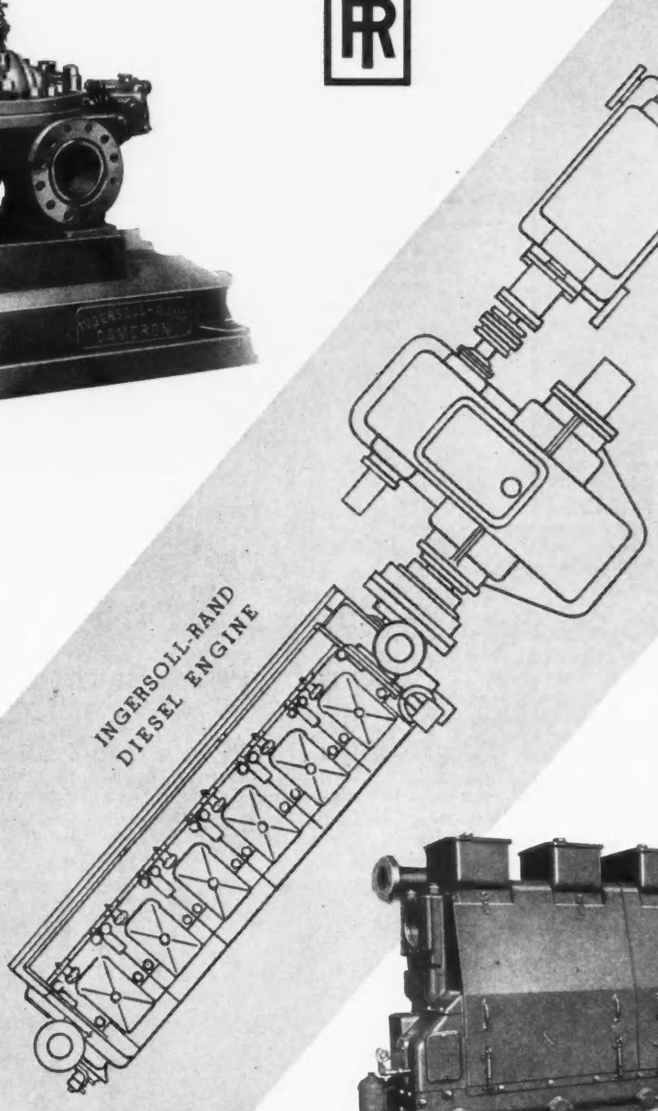
PROVED EQUIPMENT FOR PIPE-LINE SERVICE



INGERSOLL-RAND PIPE-LINE PUMP

Pipe-Line Pumps

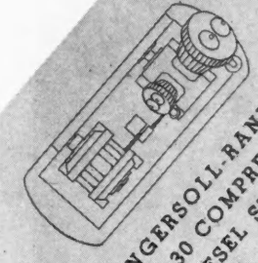
Ingersoll-Rand has been a leader in the development of the centrifugal pump for pipe-line service. Numerous successful installations and a vast amount of research form the background of experience for the modern and efficient Cameron pumps now offered by Ingersoll-Rand for pipe-line service. These units are suitable for a wide variety of service conditions and may be driven by electric motor, steam turbine, Diesel engine or gas engine.



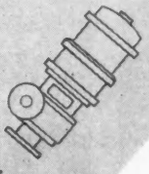
INGERSOLL-RAND DIESEL ENGINE

Diesel Engines

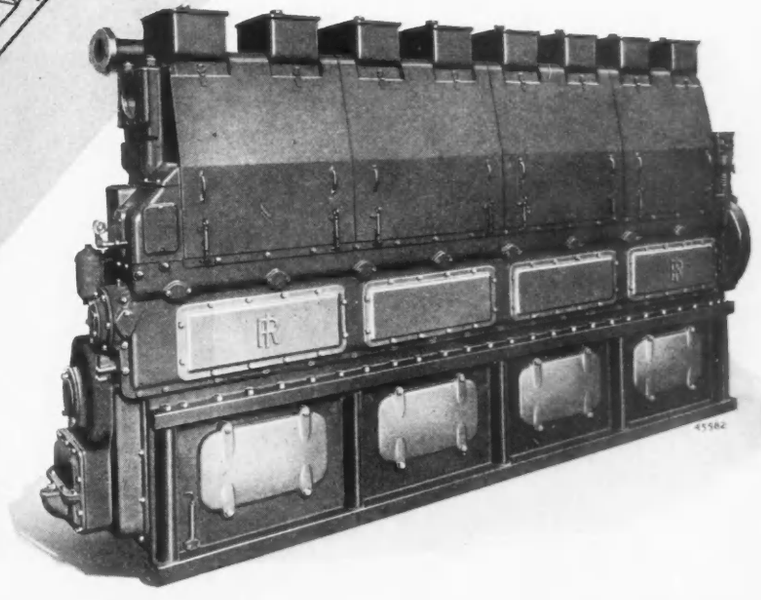
Ingersoll-Rand Diesel engines are ideal for centrifugal, pipe-line pump drive. The improved I-R type S Diesel unit because of its low fuel consumption, light weight, and low installation costs offers many money-saving possibilities. It is available in sizes from 150 to 460 hp. Other I-R Diesel and gas engines are also available.



INGERSOLL-RAND TYPE 30 COMPRESSOR FOR DIESEL STARTING



INGERSOLL-RAND MOTORPUMP FOR COOLING WATER CIRCULATION



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—Blank & Stoller

H. R. STRAIGHT
Vice President and General Manager, Empire Pipe Line Company

lowed by a 10-inch line from Seminole to Cushing. An 8-inch extension was made from near Guthrie to Oklahoma City, when this field was opened.

In 1936, due to the increase in oil from Western Kansas, two electric booster stations were added to the El Dorado-Guthrie line, one station being located 4 miles west of Perry, Oklahoma, and the other 6 miles north of Arkansas City, Kansas. At the same time 2 7-mile sections of the Guthrie-Cushing 8-inch line were looped to take care of the additional volume of oil through this line.

The drilling program in the "Mansion" area in Oklahoma City necessitated an extensive addition to the gathering system in Oklahoma City early in 1936.

Empire Pipeline Company owns jointly with The Texas Company a 12-inch line from Cushing to Chicago, and a 10-inch lateral extension of this line is now under way between El Dorado, Kansas, and Sheldon, Missouri to handle Western Kansas crude. The Western Kansas crude of Chase-Russell-Hays area is gathered by a jointly owned system, Kaw Pipe Line Company, of The Texas Pipe Line Company, Phillips Pipe Line Company and Empire companies, and transported part way by White Eagle Pipe Line Company to Valley Center, Kansas, tying into a 12-inch line of Empire Pipeline Company which was taken over in 1929.

Empire Pipeline Company has an extensive gathering system in the East Texas area, delivering into a jointly owned 12-inch line of Tidal Pipe Line Company, The Texas Pipe Line Company and Empire companies, which extends from the East Texas area to Port Arthur.

Approximately 1000 miles of main and gathering lines are owned and operated by the Empire Pipeline Company.

The official personnel of Empire Pipeline Company is as follows: Henry L. Doherty, president; H. R. Straight, vice president and general manager; F. K. Haskell, manager; A. N. Horne, general superintendent; and Clay Briggs, chief engineer.

★

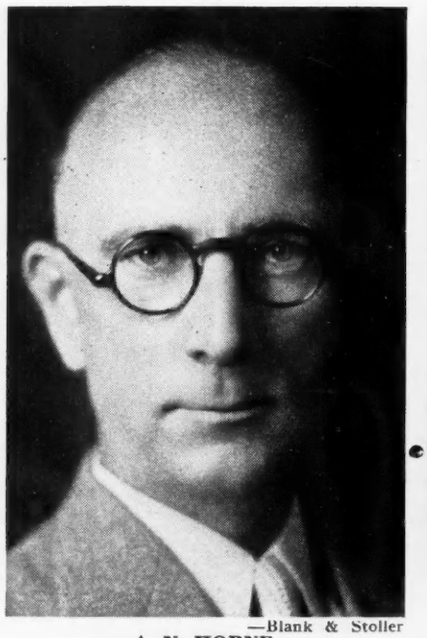
General Pipe Line Company of California

HAS GROWN FROM 150-MILE LINE BUILT IN 1911

EARLY in 1911 a survey for a pipe line from the Midway-Sunset fields over the Tehachapi and Santa Susana Mountains to tidewater at the Los Angeles Harbor was started by Esperanza Consolidated Oil Company. Construction followed immediately the completion of this survey.

The line, of 8-inch screwed pipe, approximately 150 miles in length, with

F. K. HASKELL
Manager, Empire Pipe Line Company



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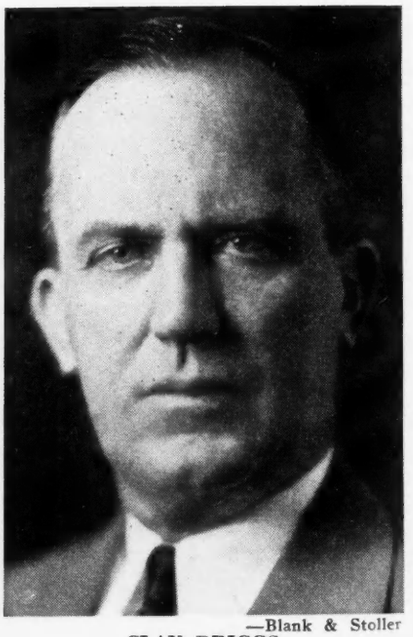
A. N. HORNE
General Superintendent, Empire Pipe Line Company



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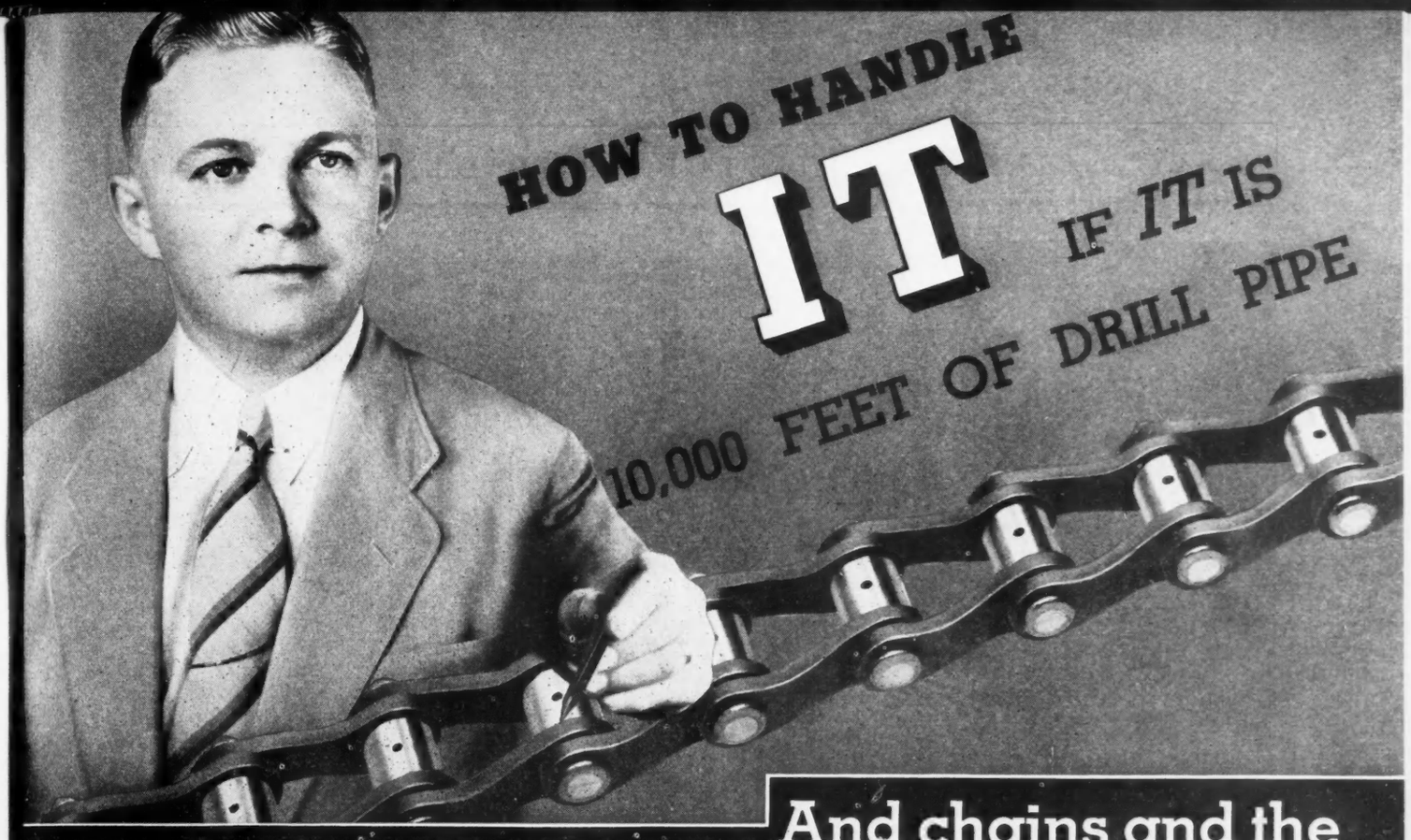
CLAY BRIGGS
Chief Engineer, Empire Pipe Line Company



And chains and the ropes of ten-line blocks must travel faster

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How well it can is shown on one Texas well where actual test showed the jackshaft to be turning at 530 r.p.m. resulting in a chain speed of 2650 f.p.m. for DW-4 Chain! On this well a complete round trip was made from the bottom at 10,001 feet in 4½ hours!

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A. L. WEIL
President, General Pipe Line Company of California

13 pumping stations, was completed in 1912. General Pipe Line Company was organized to operate this line for The General Petroleum Company, now General Petroleum Corporation of California, the successor of Esperanza Consolidated.

This line, which by many was considered impracticable and even impossible of construction and operation, was conceived by Captain John Barneson, the founder and for many years the guiding hand of General Petroleum Corporation and by the late Rea E. Maynard, the engineer responsible for its construction. Later operation has fully justified not only its possibility and practicability but has proved the broad vision and sound judgment of these two men.

The year following completion of the 8-inch line from Midway to San Pedro, a 50-mile branch, also 8-inch, was laid from Lebec Station, near the summit of the Tejon Pass, to Mojave, primarily to support the Santa Fe Railway with fuel for a large portion of its system.

The next extension of consequence was approximately 30 miles of 6-inch line from the Lost Hills field to Midway Station, the initial pumping station on the original line. This line, laid in 1914, also takes oil from the Belridge field.

In 1918 and 1919, 35 miles of 6-inch line was laid to bring crude from the Montebello-Brea-Olinda fields to the company's Vernon Refinery at Los Angeles.

As the Santa Fe Springs and Signal Hill fields were developed, 8-inch and 6-inch lines were constructed from these sources to the Vernon Refinery, the Redondo field also being connected to the pipe line system at Wilmington Station.

The building of another company refinery at Torrance in 1929 necessitated many tie-ins to the system.

A 6-inch line from Kettleman Hills to Lost Hills, built the latter part of 1928, added approximately 35 miles of 6-inch to the original line. With the building of the Kettleman North Dome Association's pumping station in 1931 about 70 miles of 8-inch pipe was laid from there to Midway Pumping Station.

The increased production of the company in the Kern and Poso fields caused the construction in the latter part of 1929 of 25 miles of 10-inch line from near Bakersfield to Emidio Station, an intermediate pumping station on the original 8-inch line. A branch of this line was run to tap the recently developed Mountain View and Edison fields, where also an extensive gathering system has grown.

Early in 1935 the quantities of oil received from the north, particularly from the Kettleman and Mountain View fields, increased to such an extent that additional facilities had to be provided from Emidio Station southward. Instead of looping the existing 8-inch, a 90-mile 10-inch line was constructed from the Lebec Station to the Torrance Refinery, the old 8-inch system from near Newhall being tied into it to furnish part of the Vernon refinery's requirements. The rest of the 8-inch from Lebec to the junction point was taken up to double the original 8-inch carrier from Emidio to Lebec.

The system of General Pipe Line Company has thus grown from its original 150 miles of 8-inch trunk line and a few miles of gathering line to one which comprises nearly 700 miles of 6-inch, 8-inch and 10-inch, with almost 200 miles of 3-, 4-, 6- and 8-inch of gathering line in the various fields.

Present officers of the company are: A. L. Weil, president; R. A. Sperry, first vice president; E. L. Adams, vice president and general manager; J. L. Martin, general superintendent; and F. D. Posey, engineer.

E. L. ADAMS
Vice President and General Manager, General Pipe Line Company of California

J. L. MARTIN
General Superintendent, General Pipe Line Company of California

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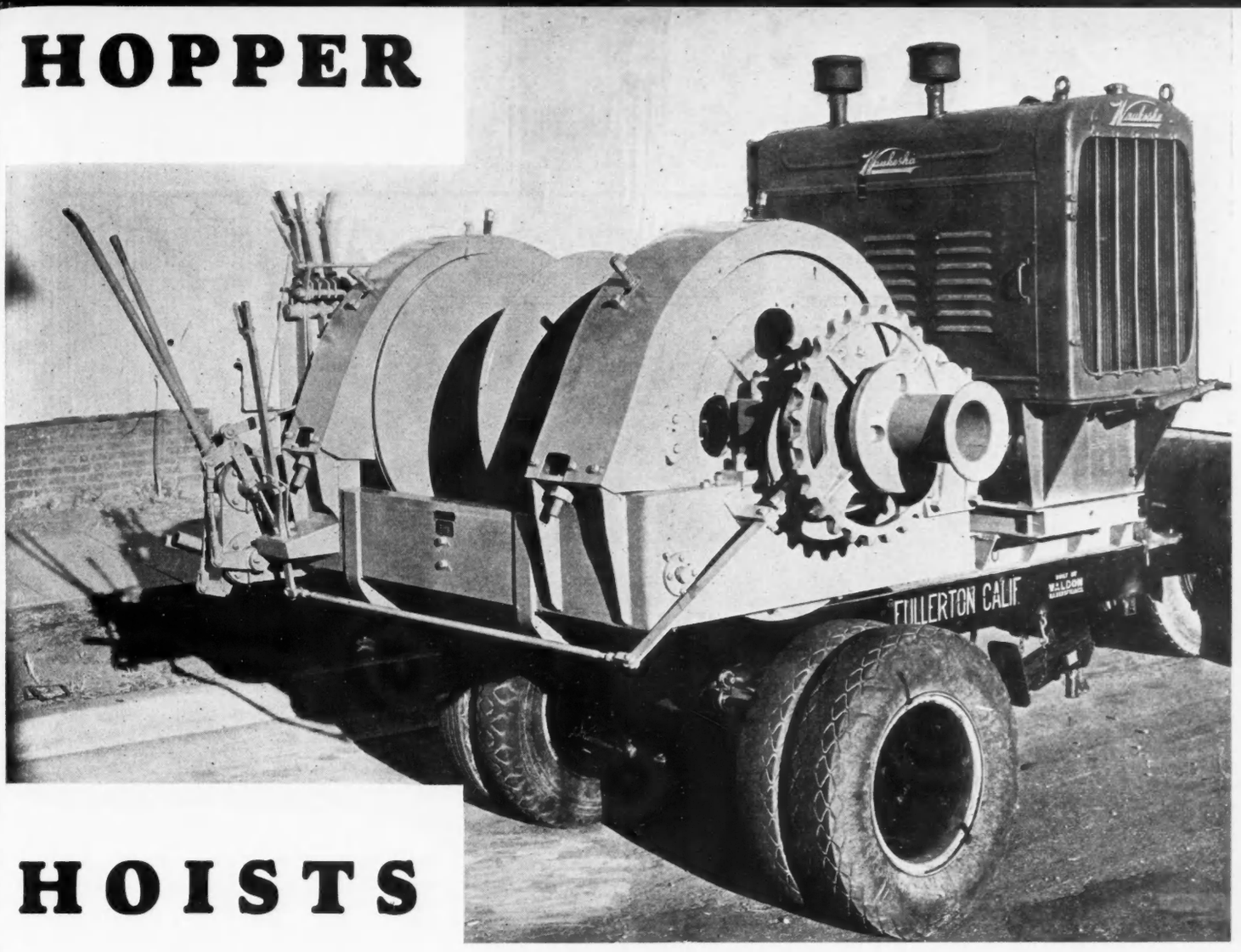
Gulf Refining Company

OPERATES LINE FROM OHIO TO ALL MID-CONTINENT STATES

GULF REFINING COMPANY owns and operates an oil carrier system extending from Ohio across Indiana, Illinois, Missouri, into Oklahoma, Kansas, Arkansas, Louisiana, Texas and New Mexico.

Until February 1 of this year this vast system was operated by Gulf Pipeline Company of Texas Gulf Pipeline Company of Oklahoma, Gulf Refining Company of Louisiana, and Gulf Pipeline Company of Pennsylvania, when

HOPPER



HOISTS

The Hopper Type "H" Portable Hoist and Draw Works

This machine, as shown above, has been developed for portable well servicing and exploration work. Its design provides a draw works that is sturdy and yet completely portable; its transmission is especially designed to withstand the severe shocks imposed upon it. All parts are readily accessible and can be worked upon or adjusted without interference from other parts. All controls are easily operated from the operator's position.

The Drum has the Hopper Friction Clutch which enables the load to be started from a standstill with the motor developing its full h. p. at the maximum governed r. p.m. Either a single or double drum can be provided. This equipment is powered with a prime mover of 112 h. p.

Due to its portability, this machine can drill wells on a lease and then be left as a servicing machine for pulling, bailing or redrilling work.

For Well Servicing

The Hopper Type "H" Portable Hoist will service wells to depths of 6000 feet or more and it may be used with economy for that purpose alone. It can quickly be converted into a highly efficient rotary draw works for fishing jobs, redrilling, recovering liners, general utility work and drilling with the mounting of the rotary attachment.

Specifications

Complete specifications will be furnished upon request by the nearest sales company together with data to meet any conditions. The entire equipment can be transported on a truck or trailer and is supplied with quickly detached catheads which make the machine legal road width. The transmission is of the constant mesh type with finger clutches that are readily shifted so that empty blocks can be returned quickly for return loads.

PORTABLE EQUIPMENT TO MEET EVERY REQUIREMENT

Hopper Hoists and Draw Works, supplied with or without Sand Reel and Rotary Drive Attachments, are made in different sizes from 36 h.p. to 300 h.p. They are powered by gas engine, Diesel or electric motor of any make desired. They may be self-propelled or mounted on tractor, truck, trailer or skids for mounting in field shops. Send for details on the size and type of Hopper Hoist to meet your conditions.

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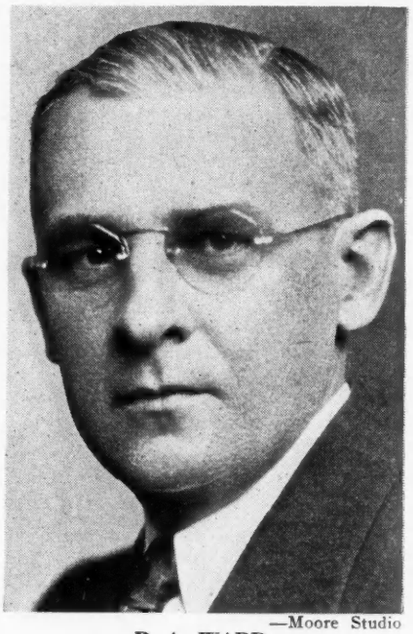
There is a HOPPER PORTABLE HOIST for every need

the Mid-Continent and Gulf Coast operating concerns were put under the control of Gulf Refining Company, a Delaware Corporation.

Gulf Pipeline Company of Texas was organized in November, 1906. The company's first line was one laid from the Gulf Coast of Texas to Oklahoma. This line, an 8-inch system, was completed in 1907 and ran from Sour Lake, Texas, to Glenn Pool, south of Tulsa, Oklahoma. In 1909, Gulf Pipeline Company of Oklahoma was organized and took over the property in that state.

As oil fields developed in Oklahoma, Kansas, Louisiana, Arkansas, Texas and New Mexico, the system was extended until it embraced all the important oil producing sectors. Outstanding among these was the building of the West Texas system in 1927.

In 1930, Gulf Pipeline Company of Pennsylvania constructed a line from Glenn Pool, Oklahoma, to Dublin, Indiana. At Dublin, the line branched, one part going northeast to Lima, Ohio, and the other to connect with South West Pipe Line Company's line in Pennsylvania.



—Moore Studio

P. A. WARD
Secretary-Treasurer,
Great Lakes Pipe Line Company

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Great Lakes Pipe Line Company

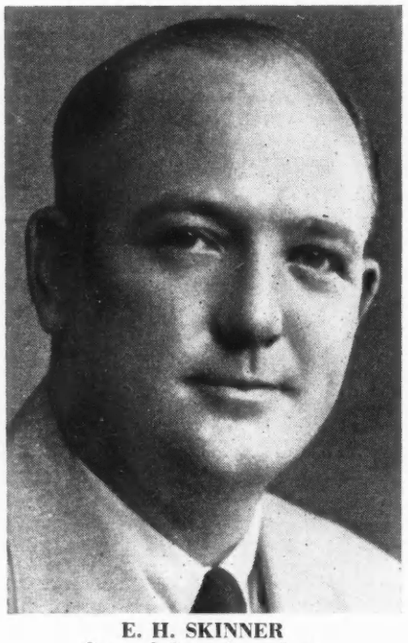
OPERATES THE WORLD'S LONGEST GASOLINE LINE

GREAT Lakes Pipe Line Company was organized in 1930 for the construction and operation of a pipe line which would serve to transport gasoline from various refining points in Oklahoma and Kansas to distributing points in the north. An extensive study preceded the construction program, which was necessitated by the many unusual features in connection with the transportation and delivery by pipe line of refined products.

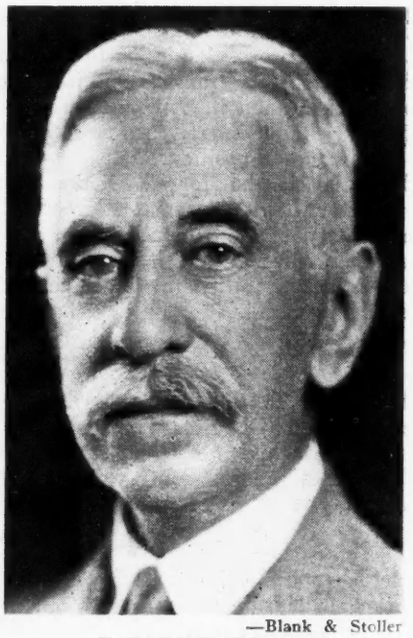
The original construction was completed in 1931 and consisted of 132 miles of 4-inch, 699 miles of 6-inch, and 407 miles of 8-inch pipe, making a total of 1238 miles. A 4-inch line was laid from Muskogee to Okmulgee, Oklahoma, and a 6-inch line from Okmulgee to Barnsdall, Oklahoma. A 6-inch line was laid from Ponca City to Barnsdall, Oklahoma. The lines mentioned constitute the Oklahoma gathering system and serve refineries located at Muskogee, Okmulgee, Tulsa, Sand Springs, Barnsdall and Ponca City. An 8-inch line, consisting of 392 miles, extends from Barnsdall, Oklahoma, to Des Moines, Iowa. From Des Moines 260.69 miles of 6-inch line extends to Minneapolis, Minnesota, and another 6-inch line, 303.30 miles in length, extends to Franklin Park, Illinois, a suburb of Chicago. A 4-inch line, 121.63 miles in length, extends from Osceola, Iowa, to Omaha, Nebraska. Gasoline is received from a refinery at El Dorado, Kansas, through a connection with another pipe line company.

Primary pumping stations were placed at approximately 50-mile intervals on the line. The buildings were constructed of brick and tile. The equipment consists of Diesel engines and reciprocating pumps, with a fire wall separating the pump rooms from the engine rooms. An auxiliary building of brick construction located at

DAN MORAN
President,
Great Lakes Pipe Line Company

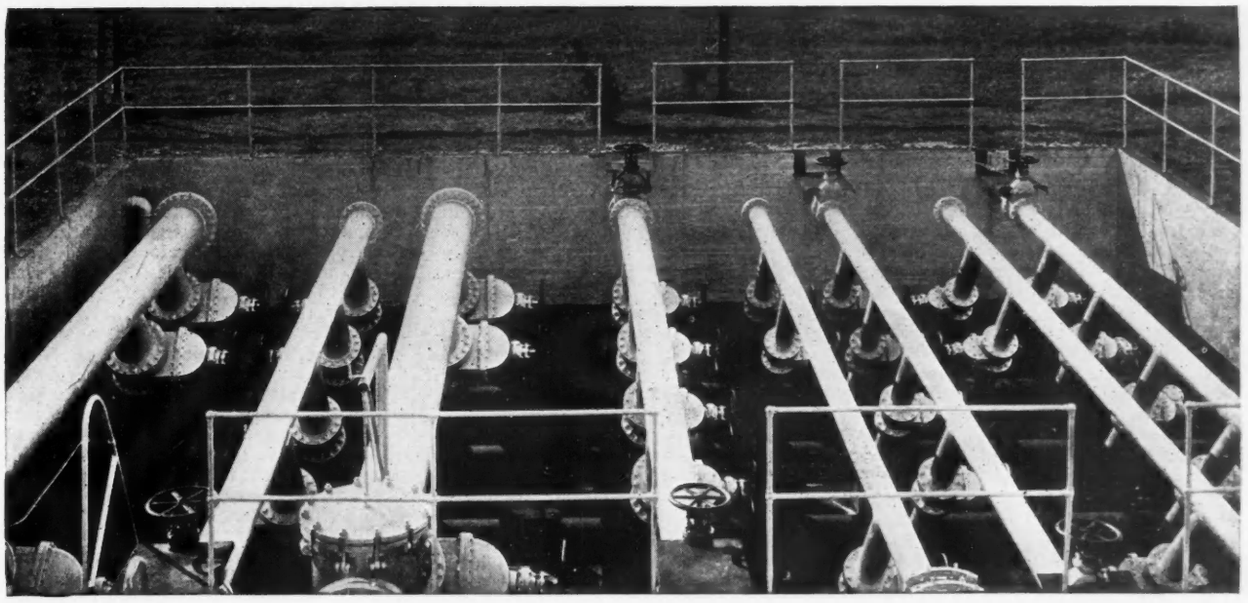


E. H. SKINNER
General Superintendent,
Great Lakes Pipe Line Company

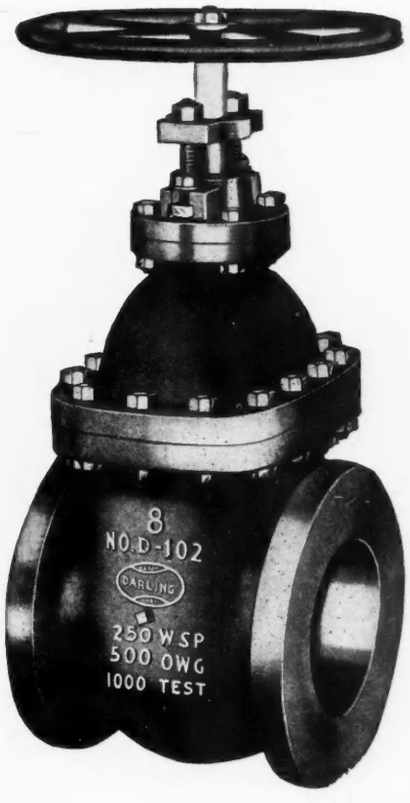


—Blank & Stoller

F. E. RICHARDSON
Chief Engineer,
Great Lakes Pipe Line Company



Built right FOR THE **RIGHT** KIND OF SERVICE



A Darling Gate Valve installation may be the remedy for *your* particular valve troubles. Each Darling Gate Valve design represents the *solution* of many valve problems; in other words, your own problems have very likely been encountered and solved already by Darling designers and builders. In pipe line, refinery and field—Darling users have learned the wisdom of *buying the best to save the most.*

Trouble-free service means economy. Darling Valves assure this *right* kind of service. You can *depend* on Darlings for economical performance over a long period of time. For your next valve installations—

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DARLING
GATE VALVES

each station houses the heating boiler, water and fuel pumps and water softening equipment.

Steel tankage with pontoon floating roofs was constructed at each primary station to serve for emergency use in case of mechanical or line trouble. At some of these stations additional tankage was provided to allow for differences in pumping capacity to and from the stations. Tankage is provided at all terminals for the receipt of gasoline prior to loading into tank cars.

There are seven terminals from which gasoline is shipped and these are located at Kansas City, Kansas; Des Moines and Coralville, Iowa; Omaha, Nebraska; Chicago, Illinois; Minneapolis, Minnesota; and East St. Louis, Illinois.

In addition to the necessary tankage each terminal is provided with the required Q and Ethyl blending facilities, loading equipment, loading racks and complete laboratories which include CFR engines for octane determination.

A telephone-teletype circuit extends over the entire system, containing 3993 miles of wire. The telephone system is of the selective ringing type and is used for dispatching and receiving hourly reports and gauges from every pumping and receiving station on the system. Each terminal is connected by teletype with the general office at Kansas City, Missouri.

The following betterments have increased the flexibility of the system and decreased the time required for the products to be in transit:

In 1933, 15 electrically driven booster stations were installed between the primary stations located between Barnsdall, Oklahoma, and Chicago, Illinois.

Two similar boosters installed between Osceola, Iowa, and Omaha, Nebraska, and a single 8-inch line between Kansas City, Kansas, and Des Moines, Iowa, constituted the 1934 construction.

In 1935, five of the electrically driven booster pumps were installed between Des Moines, Iowa, and Minneapolis, Minnesota, and one between Ponca City and Barnsdall, Oklahoma.

Officers of Great Lakes Pipe Line Company are: Dan Moran, president; J. J. Cosgrove, vice president; Harry Moreland, vice president and general manager; P. A. Ward, secretary-treasurer; E. H. Skinner, general superintendent; and F. E. Richardson, chief engineer.

★

Humble Pipe Line Company

EXPANSION HAS BEEN RAPID SINCE ORGANIZATION IN 1917

—Blank & Stoller

R. V. HANRAHAN
President,
Humble Pipe Line Company

IN the early part of 1917 some eight or more independent operators decided to pool their resources, and, as a result, a charter for Humble Oil & Refining Company was received June 21, 1917. The same year this company acquired the stock of Southern Pipe Line Company, which had been incorporated under the laws of the State of Texas in April, 1913. At the time of its acquisition by Humble Oil & Refining Company, the actual lines of Southern Pipe Line Company consisted of approximately 6000 feet of 6-inch at Goose Creek with about 7 miles of 4-inch under construction in the Burkburnett field.

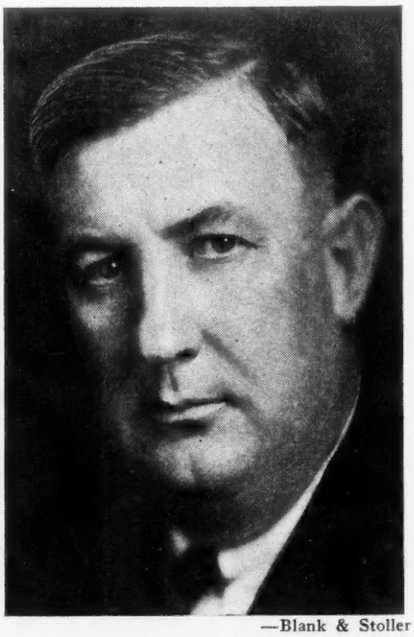
Two years later the name of Southern Pipe Line Company was changed to Humble Pipe Line Company, a subsidiary of Humble Oil & Refining Company, and operations under the new name started March 1, 1919.

With the mileage of system as noted above as a nucleus, plans were immediately started on organization of the new company for a trunk line system extending from the Ranger field to tidewater. The same year West Columbia field showed promise and decision was made to connect and lay line also to tidewater, which line was later increased to double original capacity by booster and loops.

About the same time, Humble Oil & Refining Company was contemplating the construction of a refinery at Baytown. At that time the Houston Ship Channel was not dredged to sufficient depth for loading boats to a desired draft, and as a result decision was made to construct a crude oil loading terminal at Texas City, where more adequate facilities were available. Therefore, the original Ranger trunk line system was built into Webster Station and tank farm, from which place lines were laid to the refinery at Baytown and to the loading terminal at Texas City. In addition to the trunk line system from Ranger to tidewater, the gathering system in the Ranger field was constructed to gather the oil into the initial main line tank farm located at Comyn. This original trunk line was an 8-inch line extending from Comyn to Webster, a distance of 275 miles, with six pumping stations, and had a capacity of 20,000 barrels per day.

Each of the six pumping stations were equipped with plunger pumps driven by multi-cylinder vertical Diesel oil engines. The majority of the pipe line systems in the United States at this time employed the use of horizontal slow-speed Diesel and semi-Diesel equipment for driving their pumps and many of the stations employed the use of steam triple expansion pumping engines. Humble Pipe Line Company can point to this line as being the first trunk line of any size employing the use of vertical Diesels throughout.

The actual construction of the line was begun in April, 1919, and on December 17 of the same year oil was started out of Comyn for its destination, arriving at Webster tank farm

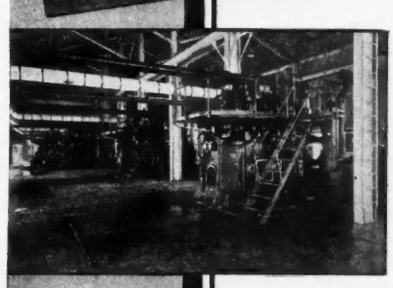


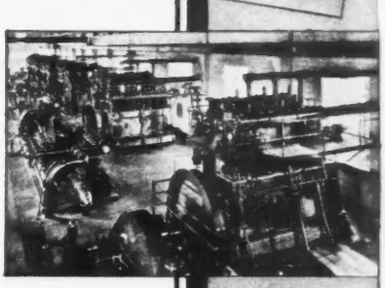
—Blank & Stoller

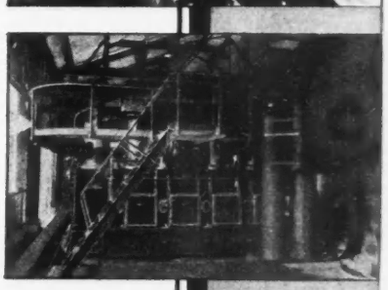
J. A. NEATH
Vice President, and General Superintendent, Humble Pipe Line Company

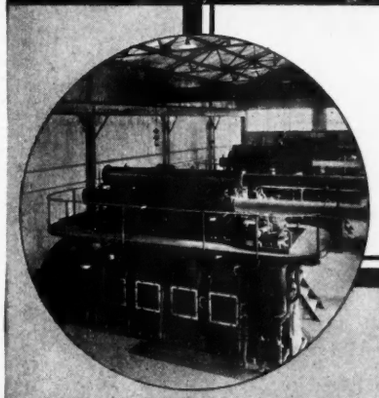
McINTOSH & SEYMOUR DIESEL PIPE LINE INSTALLATIONS

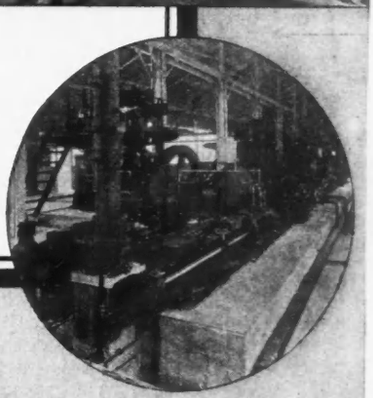
Sinclair Prairie Pipe Line Co.	59
Stanolind Pipe Line Co.	30
Humble Pipe Line Co.	24
Texas Pipe Line Co.	27
Texas Empire Pipe Line Co.	23
Standard Pipe Line Co.	5
Oklahoma Pipe Line Co.	5
Magnolia Pipe Line Co.	5
Tide Water Pipe Line Co.	2
Midwest Refining Co.	1
Ajax Pipe Line Co.	15
Gulf Pipe Line Co.	28
Total	224











Such popularity must be deserved.

AMERICAN LOCOMOTIVE COMPANY

DIESEL ENGINE DIVISION

OFFICE AND WORKS, AUBURN, N. Y.

NEW YORK, N. Y., 30 Church St. BOSTON, MASS., 20 Newbury St. CHICAGO, ILL., McCormick Bldg. WASHINGTON, D. C., Barr Bldg.
HOUSTON, TEXAS, Esperson Bldg. KANSAS CITY, MO., Commerce Trust Bldg. SAN FRANCISCO, CAL., Bourn Bldg.

on January 14, 1920, and at Texas City on January 22. The first boat, the S.S. Rayo and Barge 92, were loaded on January 29 at the latter point.

In the early part of 1920, Hull field came into prominence and a gathering system was installed with a 40-mile 8-inch trunk line connecting Baytown Refinery and terminal.

With this as a beginning, Humble Pipe Line Company has extended its network of lines and pumping facilities into nearly all producing areas of the state of Texas and the southeastern corner of New Mexico, and within the last few years in many cases it has only been necessary to extend relatively short laterals to serve new producing areas.

In 1921, a line was constructed from the Pierce Junction field to Webster. In the late fall of the same year the famous Mexia pool on the Balcones Fault was developed rapidly, and Humble Pipe Line Company was the first to enter this territory with a trunk line system. This line went into operation January 1, 1922, delivering oil into Hearne Station, located on the original Comyn-Webster line. The lateral serving this new area was subsequently built up to a total capacity of approximately 80,000 barrels per day, in order to take care of the rapidly developed Balcones Fault.

About this time development was being made of numerous pools in the Wichita Falls area, and in the summer of 1924 the company extended its gathering systems to serve this area, connecting with its trunk line system at Comyn.

In the fall of 1924 an outlet from Big Lake field in Reagan County was required, and an 8-inch line of 20,000 barrels daily capacity with four stations was extended from Comyn to this field, a distance of 193 miles, which made necessary the building up of main lines from Comyn to Webster. Subsequent to serving the Big Lake field, many new pools were developed in the West Texas or Permian Basin, and the system from Big Lake to Comyn was doubled in 1926. In the same year the company acquired from Associated Pipe Line Company some small pipe line facilities in Southwest Texas, and it was necessary to consider an outlet from this area. Therefore, decision was made to build the Bruni-Ingleside line, an 8-inch line approximately 110 miles long, extending from Bruni to Seaboard in the vicinity of Aransas Pass. Also during 1926 an 8-inch line was constructed from Hull to Beaumont to serve Spindletop field.

In 1927, decision was made to construct the Panhandle line, this line extending from Burnett to Comyn, a distance of approximately 325 miles with seven stations. This line consisted of a single 10-inch having a capacity of 30,000 barrels per day. Almost immediately following the construction of this line an additional outlet was required from West Texas area, as the Yates Pool had been discovered and further development was taking place in Crane, Upton, Ector, and Winkler Counties.

As a result of a study for increased outlet from West Texas, final decision was made to construct an entirely new system from Kemper to Ingleside, a distance of 348 miles, which system was built for a capacity of 50,000 barrels daily out of Kemper. A loading terminal on Harbor Island, approximately 12 miles from Ingleside, was constructed by Humble Pipe Line Company which is one of the largest crude oil terminals in the world. Its maximum loading rate to ships is 30,000 barrels per hour.

In 1928, the company's facilities were extended to the Winkler field connecting with Kemper Station, and in the same year the 8-inch line from Sugarland to Webster was constructed. Sixty miles of 8-inch was built from Big Spring field to Kemper Station, and 31 miles of 8-inch was extended from Satsuma on the original Comyn-Webster line to Raccoon Bend field. In the same year 67 miles of 8-inch was built from Groesbeck Station to Todd to serve the Boggy Creek field, and in addition the latter part of this year the Yates-Kemper line was doubled.

In 1929, one hundred twenty-six miles of 8-inch line was laid between Luling and West Columbia, and due to discovery of oil in New Mexico an 8-inch system was extended from Winkler Station to Jal in Lea County.

In 1930, a line was constructed to connect the Darst Creek field with Luling; 22 miles of 4-inch was laid between Humble and Baytown, and with the discovery of oil in the Refugio area 28 miles of 8-inch was laid to Ingleside. Also in the same year there was a 38-mile extension built in New Mexico from Jal to the Hobbs area, and in addition an extension of the Refugio line into Pettus area.

Also in 1930 an outlet from Van Pool was constructed to the Texas-Louisiana State line, tying in with Standard Pipe Line Company's system for deliveries to the latter's Moore Station, this line having a capacity of 20,000 barrels per day. Following close on the development of the Van field was the discovery of oil in East Texas, and as the Van-Moore line ran through this field, immediate outlet for the East Texas field was secured by the construction of Longview station only. Due to rapid developments in East Texas it was necessary to build up pipe line outlets from Longview to the state line to approximately 90,000 barrels per day by additional lines and a booster station, and also the construction of a system from Arp south through Todd connecting with the Comyn-Webster main line at Hearne for a capacity of 60,000 barrels.

The year 1931 saw the Government Wells field in Duval County developing rapidly and 22.5 miles of combination 4-inch and 6-inch line was laid from this area into Benavides Station connecting with the Bruni-Ingleside 8-inch line, the capacity outlet from Government Wells being increased more than double in recent years.

In 1932 approximately 23 miles of 8-inch line was laid between Conroe and Satsuma giving an outlet for the Conroe field, and in 1933 twenty-four miles of 6-inch was laid between Hilbig and Luling to serve that area, and later a 14-mile combination 8-inch and 10-inch was laid from Tomball to Satsuma to give an outlet to the Tomball field.

Just recently in the current year, an 8-inch gasoline line approximately 300 miles long has been put into operation between East Texas and Baytown with a lateral coming into the system at Satsuma from Conroe.

With the meager beginning in 1919, Humble Pipe Line Company has today approximately 4358 miles of trunk line and 1968 miles of gathering line, making a total of 6384 miles. Operating on these lines are 62 trunk line stations and 81 principal field or gatherign stations, with a total storage capacity in steel tanks of various sizes of approximately 16,000,000 barrels.

The president of Humble Pipe Line Company is R. V. Hanrahan. J. A. Neath is vice president and general superintendent and H. M. Stevenson is chief engineer.

★

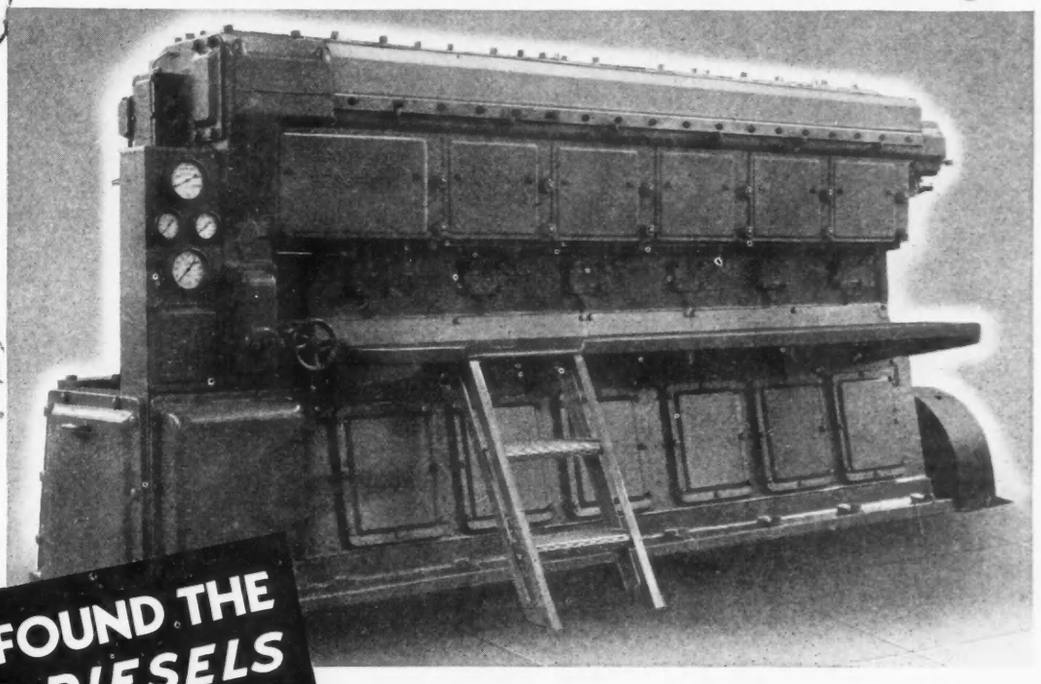
Magnolia Pipe Line Company

THE OLDEST OPERATOR OF OIL LINES IN TEXAS

MAGNOLIA Pipe Line Company is the oldest and one of the largest operators of crude oil pipe lines in Texas, having succeeded its predecessors in the ownership of a short crude line built in 1898 to deliver crude produced in the Corsicana shallow field, first commercial oil strike in Texas, to a refinery on the outskirts of Corsicana. This original pipe line for the state has since been enlarged into a four-state system, embracing 3901 miles of trunk lines; 2055 miles of gathering lines; and 70 main line stations, with an aggregate trunk line capacity of 150,000 barrels daily. Except for crude deliveries made to connecting lines in Oklahoma and to interior Texas refineries operated by Magnolia Petroleum Company, all oil gathered by the company in Oklahoma, Texas, Arkansas and Louisiana is dispatched to Beaumont.

The original Corsicana field system that forms the basis of the present day system operated by Magnolia Pipe Line Company was built by the J. S. Cullinan Company, which was formed by J. S. Cullinan,

HURRAH FOR "ANGLO-MEX"!



THEY'VE FOUND THE HUSKIEST *DIESELS* . . . BUILT FOR THE TOUGHEST SERVICE ON EARTH!

The Anglo-Mexican Petroleum Corporation were looking for Diesels that could stand the merciless grind of oil-line pumping, 24 hours a day. Their choice centered on Cooper-Bessemers, Type JT-6. Six of these Diesels go to Tampico, Mexico, where they will direct-drive Wilson-Snyder reciprocating oil pumps --- under constant load.

Type JT is a "natural" for **ANY** tough application, because it's **strong in its vitals** --- costs less to keep up. Economical to install, too--being moderately light and compact. Ask our representative about the great convenience, reliability, and economy of Cooper-Bessemer Diesels. Standard sizes, 35 to 1250 H. P.

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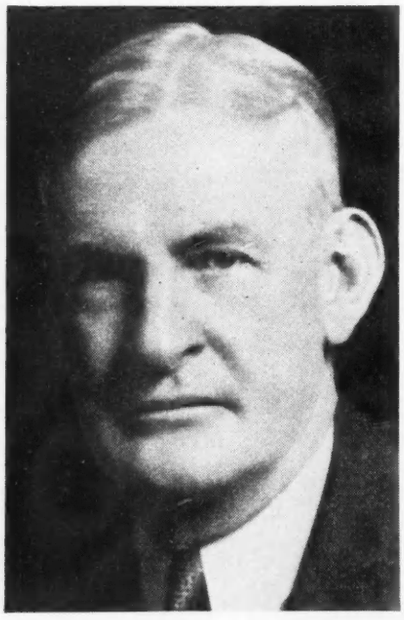


T. J. FITCH
Vice President and Manager, Magnolia Pipe Line Company

who now resides at Houston, and the late Calvin N. Payne of Titusville, Pennsylvania. Financial backing for the pipe line and a refinery, the first in Texas, was obtained from the late Henry C. Folger of New York City and associates. Cullinan retired from the company in 1902, and was succeeded by E. R. Brown, who is now chairman of the board of Magnolia Petroleum Company and Magnolia Pipe Line Company. Following this change in management, the name of the company became Navarro Oil Company, and on December 7, 1909, the name was changed to John Sealy Company as result of controlling interest having been acquired by the late John Sealy, wealthy Galveston banker and business leader. The company was reorganized on April 24, 1911, as Magnolia Petroleum Company, with E. R. Brown continuing in active charge. From the latter date to December 15, 1925, the company operated as a joint stock association, then qualified for a corporation charter under the laws of Texas, with all pipe line activities segregated and thereafter operated as Magnolia Pipe Line Company.

The first major pipe line project undertaken by the Magnolia Interests involved construction of 448½ miles of 8-inch trunk line in 1911-1912 from the Electra field via the Corsicana field to Beaumont. The Corsicana-Beaumont unit was placed in service first, and first oil moved from Electra in November, 1912. Dave C. Stewart, retired vice president and manager of pipe lines now residing in Dallas, was induced to withdraw as a pipe line official of Prairie Oil & Gas Company, which was then operating an 8-inch carrier from Tulsa to Chicago, to take charge of construction work. In building up an organization, Stewart hired T. J. Fitch, who was in the service of Buckeye Pipe Line Company, as his assistant. Fitch is now vice president and manager of pipe lines.

Attracted by an abundance of oil in the Healdton field, Southern Oklahoma, Magnolia Pipe Line Company invaded this area in 1914 by building an 8-inch line north from Bowie station on its Electra-Corsicana-Beaumont trunk line to Addington, Oklahoma, with two 6-inch lines extending east to Healdton. Crude runs from the Cushing field, North Central Oklahoma, also began late in 1914 when McMann Oil Company built an 8-inch carrier south from Cushing to Addington. Magnolia Petroleum Company in 1916 purchased McMann Oil Company's producing properties for $35,000,000, and paid $1,500,000 additional for the pipe line. Acquisition of this line placed the company in a stragetic position to reach later major oil strikes in Oklahoma and the system has been expanded by the addition of loops and extensions so as to serve all important fields within the borders of Oklahoma.

Discovery of high grade oil in the Ranger-Desdemona district caused Magnolia Pipe Line Company to further expand its pipe line system in 1919 by the construction of an 8-inch trunk line from Corsicana to DeLeon, which served as a concentration point for the large stocks of oil accumulated in advance of the arrival of a direct pipe line outlet.

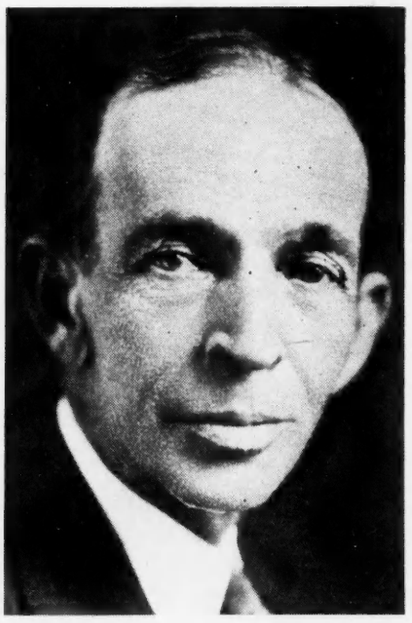
Due to increased traffic on the original Electra-Beaumont trunk line, the company added to its capacity from Bowie station south by the insertion of loops, eventually making it three 8-inch units, and a parallel 10-inch carrier was built between Corsicana and Beaumont following the development of spectacular production in the Mexia and Corsicana-Powell fields.

Magnolia Pipe Line Company invated the Luling field, first major oil strike in Southwest Texas, in 1924 by building an 8-inch carrier from the latter field to Hull station, where connection was made with idle units on its Corsicana-Beaumont system. The Luling line was extended in 1928 to the Mirando district in extreme southwest Texas.

Accumulation of huge stocks of crude in steel tankage in the Smackover and El Dorado fields, Arkansas, over a period of several years caused Magnolia Pipe Line Company to build in 1926 an 8-inch carrier from Lege station and tank farm in via the northwest corner of Louisiana to Beaumont.

Two years later the company entered into a joint agreement with Gulf Pipe Line Company to build a 10-inch line northwest from Ranger district to the Texas Panhandle. Magnolia Pipe Line Company built northwest from its De Leon station to Truscott, and the above concern built the same mileage of line in reaching their respective gathering lines in the Panhandle. This cooperative plan has proved satisfactory to both concerns, and the tariff revenue is apportioned on the basis of barrels of oil each moves through the joint line.

Invasion of the West Texas district with a direct carrier from DeLeon Junction by Magnolia Pipe Line Company was preceded by the construction of a 44-mile 8-inch line from the Church & Fields area, Crane County, to a large tank farm near Midland. This stub line was placed in service on October 5, 1927, or several weeks prior to the purchase of 220 miles of 8-inch pipe to build from Midland to DeLeon. The latter was welded in about 40 working days, and first oil was moved from West Texas December 3, 1927. About 85 miles of 8-inch loops were inserted in the Midland-DeLeon carrier in August, 1928, in order to boost the capacity from 25,000 barrels to 32,500 barrels daily. The company penetrated deeper into the West Texas Basin area in 1929 by constructing 63 miles of 10-inch welded line to the southwest from Midland to its Halley tank farm, adjacent to the Hendrick field, Winkler County. The latter unit was started March 9, 1929, and first oil was handled less than five weeks later. Due to a substantial decline in oil traffic originating in West Texas the company has abandoned within the past year the loops added to its Midland-De Leon carrier, and also the trunk line from Midland to the Church & Fields area.



W. A. SNIFFEN
Assistant Manager, Magnolia Pipe Line Company

The last major expansion program carried out by Magnolia Pipe Line Company arose from the development of the East Texas field. The company's original outlet for this field consisted of 59 miles of 10-inch welded pipe, extending southeast from its Kilgore tank farm and booster station to Center, Texas, where connection was made with the Arkansas-Beaumont carrier. This unit was placed in service March 26, 1931. Two months later a 100-mile 12-inch line was authorized to be built from Kilgore station in a southwest direction to Corsicana. The latter line was built within 30 days, and placed in operation July 20, 1931, with a rated capacity of 80,000 barrels daily. The line to Center is rated at 50,000 barrels daily.

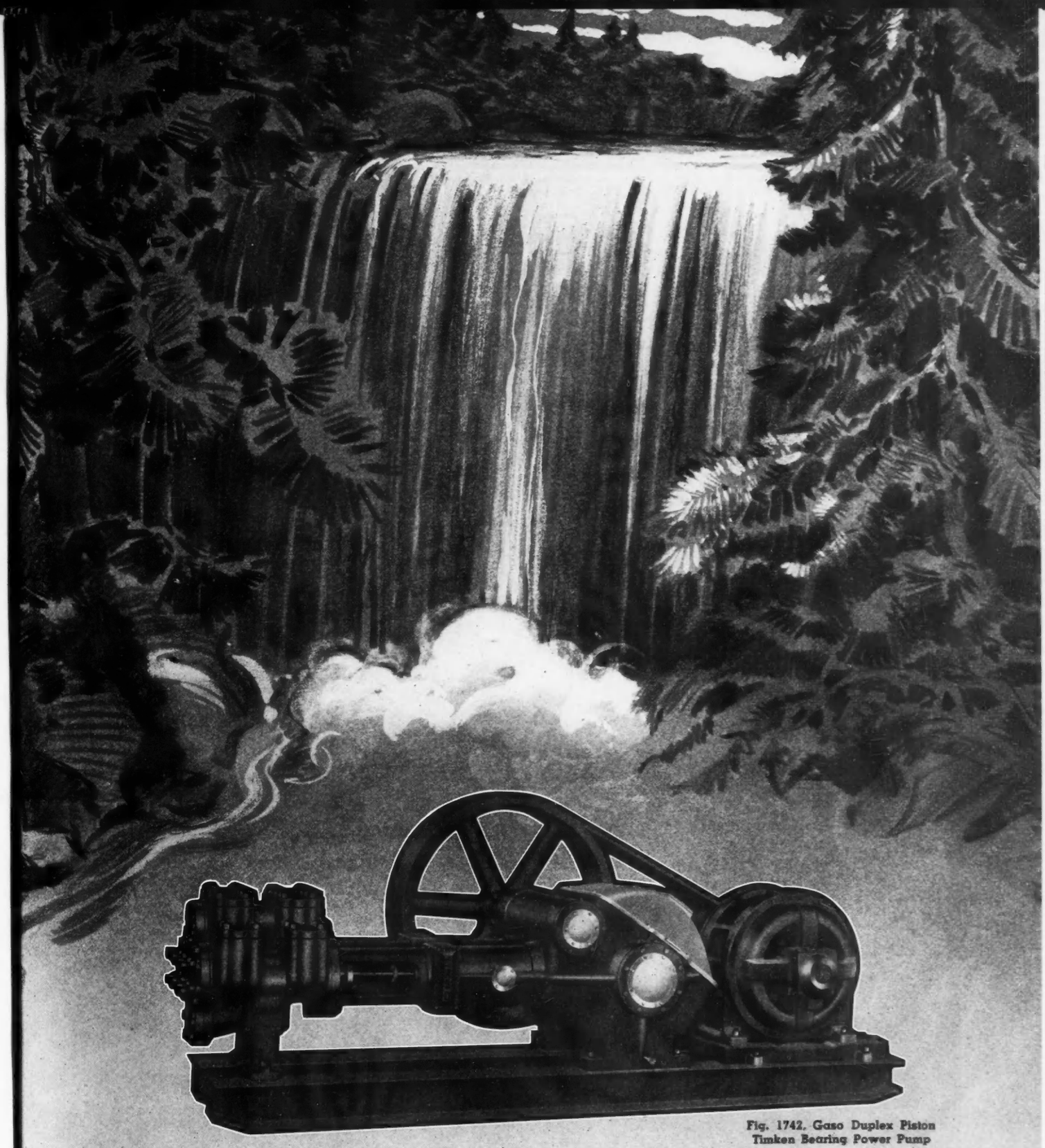


Fig. 1742. Gaso Duplex Piston
Timken Bearing Power Pump

If you've already had your vacation, this scene may serve to bring back pleasant memories. If your vacation is still in prospect, it represents our wish for an enjoyable holiday. . . . In either case, we hope that it may remind you of the carefree operation which has long been a characteristic of GASO Pumps. . . . Gaso Pump & Burner Mfg. Co., Tulsa, Oklahoma. Export Office: 149 Broadway, New York.

GASO PUMPS

for every oil industry need

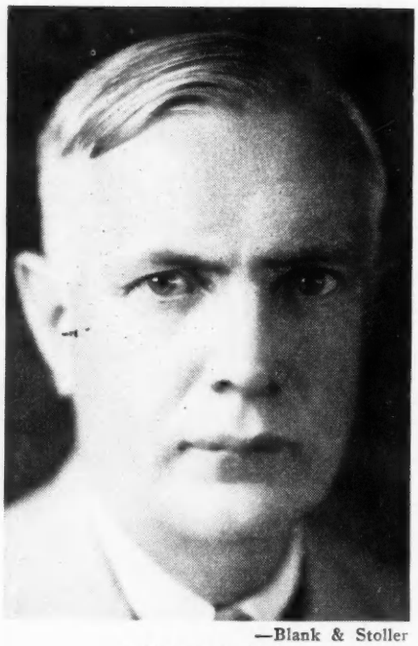
Oklahoma Pipe Line Company

ENTERED STATE SOON AFTER DISCOVERY OF OIL

OKLAHOMA PIPE LINE COMPANY was incorporated under the laws of the State of Oklahoma, November 22, 1909. General offices were located at Muskogee and transferred to Tulsa in June, 1933.

The initial line consisted of 160 miles of 6- and 8-inch screw-coupled pipe that was laid in a general southeast direction from a point about 12 miles south of Tulsa to the Arkansas state line near DeQueen. A majority of the line lies across the central section of the Kiamichi uplift. Construction was hazardous and difficult through the many virgin sections of rough, mountain country. In most cases new roads had to be built; mule and ox teams furnished the motive power for the transportation of men, material and equipment. When it is recalled that all construction was done with hand tools it seems remarkable that the 630 men employed were able to complete their job in 6 months.

The original system included 3 steam-powered pumping stations, and although obsolete, 2 of these stations can be operated at the present time. The gathering system comprised 45 miles of small line laid to the shallow fields in the Bald Hill area. All construction work was completed in 1910 and during the remainder of the year a million barrels of crude was gathered. A total of 2,000,000 barrels was transported through the trunk line, and one million barrels of this total was received from Prairie Pipe Line Company at its Creek Station.



—Blank & Stoller

PAUL GRIFFIN
Vice President and Treasurer,
Oklahoma Pipe Line Company

From 1910 to 1918, small additions were made by laying 8-inch loops parallel to the original line and constructing a pumping station at Glenn Pool. During 1918 extensive additions were made by projecting the system from Glenn Pool west to the Drumright area and north from this point into Southern Kansas. The line to Kansas passed through the west half of the Burbank field and additions were made to both the gathering and trunk system as the area developed.

From 1924 through 1929 additional loops were laid parallel to the original system and trunk line extensions carried into the Hewitt and greater Seminole fields. A combination 8- and 10-inch line was constructed from the Hewitt field east to the terminus of the original system and an 8-inch line laid from the Seminole area to Hewitt as an outlet to the southeast for crude gathered in the Seminole field. During the period of peak production at Seminole an additional 8-inch line was built from Cromwell north to Drumright and a 10-inch line laid east to Council Hill.

Extensions were made from Drumright to the Oklahoma City field in 1929 and to the Crescent and Lucien fields in 1934. An outlet was provided for production from the Fitts area in 1935. All the system is still in use except the lines in Southern Kansas, and a portion of the trunk system north of Drumright.

At the close of 1935, Oklahoma Pipe Line Company gathered crude from approximately 735 leases in 11 major producing areas. Field connections extended to 2400 stock tanks which received the production from 2650 wells. Oil gathered in 1935 totaled approximately 23,500,000 barrels and was handled through 711 miles of gathering system in which 26 field gathering stations were operated. Deliveries of 29,000,000 barrels were made through 1192 miles of trunk line in which 25 pumping stations were maintained.

Officials of Oklahoma Pipe Line Company are: W. R. Finney, president; Paul Griffin, vice president and treasurer; Charles Nelson, Jr., secretary; Bruce Ramsey, superintendent; and F. E. Warterfield, Jr., chief engineer.

—Blank & Stoller

FLOYD WATERFIELD
Chief Engineer,
Oklahoma Pipe Line Company

★

Pure Transportation Company

ORGANIZED 1934 TO TAKE OVER SEVERAL COMPANIES

PURE Transportation Company was organized and incorporated in 1934, being a statutory merger, consolidation and reorganization of Pure Oil Pipe Line Company of Ohio and Pure Van Pipe Line Company.

The nucleus of the company's Oklahoma lines were in operation prior to 1917, when The Pure Oil Company interests purchased them from their original owners. They have since been expanded to provide a gathering and transportation system between several of the Oklahoma oil fields and The Pure Oil Company's refinery at Muskogee, with connections for delivering crude to trunk lines for movement to eastern refineries.

Construction of the company's Texas lines began late in 1929 with the discovery of the Van field. In addition to the gathering system a 10-inch main line, 212 miles long, having a capacity of 46,000 barrels a day, was laid to

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Haystellite is a cast tungsten carbide of uniform hardness and toughness. It is available as Inserts, Composite Rod and Tube Haystellite. Haystellite Inserts in a variety of sizes and shapes are used to hard-set the cutting and reaming edges of the bit for maximum footage of out-to-gauge hole. Haystellite Composite Rods, consisting of crushed Haystellite in a variety of sizes in a binder of high-test steel, are used as the final hard-facing over Haystellite Inserts so that maximum wear-resistance is obtained.

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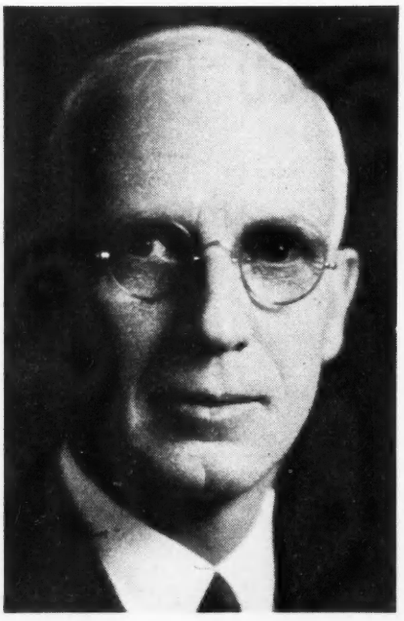
connect the field with The Pure Oil Company's refinery at Smith's Bluff, Texas. The pumping equipment on this main line consists of centrifugal pumps, powered throughout by electric motors.

The company entered the Michigan field in 1928 when Michigan crude production first became of economic importance. It since has extended its lines and activities to cover most of the pools of any importance in the neighborhood of Mount Pleasant. The main line delivers crude to The Pure Oil Company's refinery at Midland, and also to a lake terminal at Bay City.

At the time of the discovery of the Gueydan field in Louisiana, a short line was built to connect this field with a terminal on the Mermentau River. Two years later, when the Bosco field was discovered, the line was extended on to connect this field with the river terminal.

In the four states the company operates about 478 miles of main line and 401 miles of gathering lines. During the past year it handled in its various operations something over 27,000,000 barrels of crude.

Officers of Pure Transportation Company are as follows: D. D. Irwin, president; Henry Hauseman, vice president; C. H. Jay, secretary-treasurer; and W. M. Averill, vice president.



D. D. IRWIN
President,
Pure Transportation Company

★

Shell Pipe Line Company

SYSTEM EXTENDS FROM CHICAGO TO HOUSTON AND TO ALL IMPORTANT PRODUCING AREAS IN THE MID-CONTINENT

SHELL PIPE LINE COMPANY, with headquarters in St. Louis, Mo., although it was not known by its present name, really came into existence when Roxana Petroleum Corporation, a subsidiary of Shell Union Oil Company, decided to construct its own pipe line system for the transportation of crude oil from Healdton in southern Oklahoma to East St. Louis, Ill. The line was built in 1917 under the name of Yarhola Pipe Line Company. In 1919, Ozark Pipe Line Company was organized and took over this system. In 1927 the name was changed to Shell Pipe Line Company. In 1926, this system was extended from East St. Louis to Chicago.

Since its start the company had expanded its system until it now extends from Chicago to Houston and to all important producing areas in Oklahoma, Kansas, Texas, and New Mexico.

The company today operates more than 4000 miles of main and gathering lines.

J. C. van Eck is chairman of the board, Alexander Fraser, president. Richard Airey and R. P. Bascom are vice presidents. R. F. Smith is manager, and A. K. Riddle general superintendent.

Left:

J. C. VAN ECK
Chairman of the Board, Shell Pipe Line Company

Right:

ALEXANDER FRASER
President,
Shell Pipe Line Company

R. P. BASCOM
Vice President,
Shell Pipe Line Company

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ARCH BOWMAN
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BRIDGEPORT MACHINE COMPANY
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DRANE TANK COMPANY
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GULF COAST TANK COMPANY
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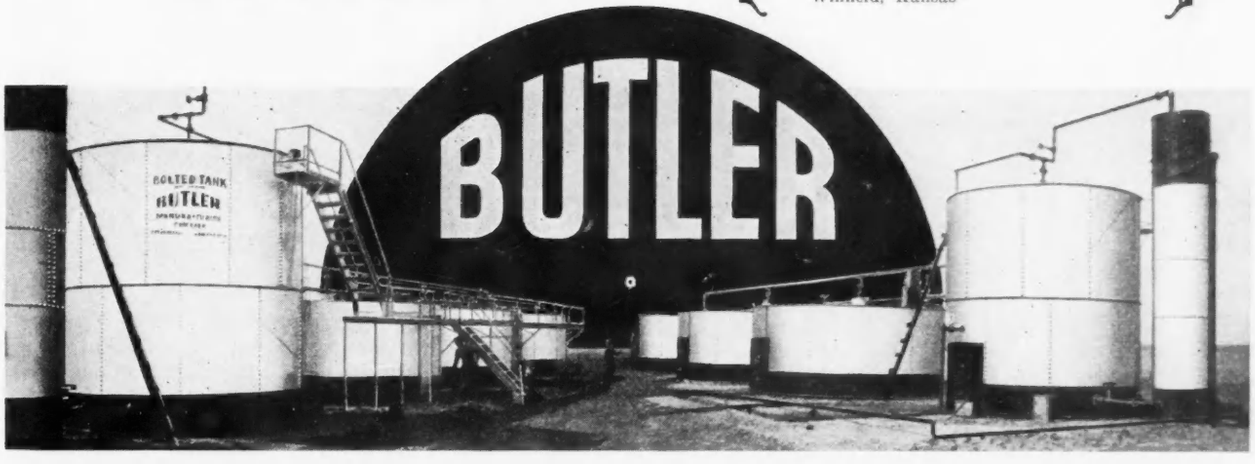
INGERSOLL TANK COMPANY
Shreveport, Lake Charles, Houma and Rodessa, Louisiana

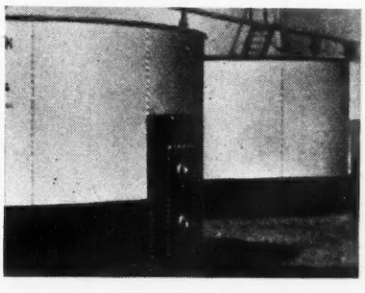
M. A. TRIMMER
Wichita and Great Bend, Kansas

W. W. LANCASTER
Winfield, Kansas



BOLTED TANKS

Butler Extra Strength Deck



Butler Mansize Clean-Out

LISTED above are the names and central locations of the most capable and reliable field organizations rendering oil field tank service. All are now prepared to serve your tank needs better with the improved Butler Bolted Steel Tank.

At the left is a view of the new Butler Extra Strength Deck and a view of the Butler Man-sized (2′ x 4′) clean-out opening. Check into these and other Butler advantages with a representative of one of the field service organizations listed above before you buy any bolted tank. It will be well worth your while from now on.

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Sinclair Prairie Pipe Line Company

OPERATES APPROXIMATELY 13,000 MILES OF LINE

J. R. MANION
President,
Sinclair Prairie Pipe Line Company

SINCLAIR Prairie Pipe Line Company with general offices at Independence, Kansas, came into existance on the last day of March, 1932, when all properties of Prairie Pipe Line Company, consisting of a total of 5983 miles of line and stations, became the property of Sinclair Prairie Pipe Line Company. At this time the company operated extensive trunk and gathering systems in the states of Texas, Kansas, Oklahoma, Iowa, Missouri, Indiana and Illinois.

Chronologically, the present organization found its inception in The Kansas Oil & Gas Company, organized in December, 1900. In January, 1901 The Kansas Oil & Gas Company purchased the properties of Forest Oil Company, subsidiary of Standard Oil Company of New Jersey, which had earlier acquired oil and gas properties developed in Wilson County, Kansas, by Guffey and Galey. The name was changed during the early part of the same year to Prairie Oil & Gas Company.

In 1903 the company constructed 32 miles of six-inch line from the Chanute and Humbolt pools to a refinery of Standard Oil Company of Kansas at Neodesha, this line being the beginning of the company's present facilities. By 1905 this single trunk line had been given minor extensions, and afforded a direct outlet from the Red Fork production area near Tulsa. Discovery of new production at widespread locations resulted in a gradual extension of the pipe line system and the construction of parallel lines to increase the capacity of the trunk line arteries. By the latter part of October, 1913, Prairie Oil & Gas Company operated approximately 2500 miles of line.

Prairie Pipe Line Company was incorporated in 1915 to handle all transportation for Prairie Oil & Gas Company. In 1918 service was extended into Texas, where new production had been encountered near Hensley, and was servicing practically every major pool in the states of Oklahoma and Kansas.

Important purchase of facilities of other companies included the obtaining of approximately 325 miles of gathering lines in North Texas fields in 1919 from Prairie Oil and Gas Company. In 1925, the company obtained Pure Oil Pipe Line Company of Texas through stock purchase. Pierce Pipe Line Company, operating in Texas and southern Oklahoma, was acquired in 1932. Through sale, Sinclair Prairie Pipe Line Company (of Texas) came into existence. Certain systems of lines of both these organizations have been sold to other interests.

Sinclair Prairie Pipe Line Company at present operates approximately 13,000 miles of gathering and trunk lines of various sizes. Gathering systems are located in the states of Kansas, Oklahoma and Texas. The company's trunk line extends from Hensley station, near Jacksboro, Texas, in a general northeasterly direction to a point in Indiana., near Chicago, Illinois. States having trunk lines facilities are Missouri, Kansas, Oklahoma, Iowa and Illinois, and the two previously mentioned.

Chief officials of Sinclair Prairie Pipe Line Company include C. H. Kountz, chairman of the board, J. R. Manion, president, E. H. Chandler, vice president, W. R. Reed, general superintendent and C. R. Weidner, chief engineer.

C. H. KOUNTZ
Chairman of the Board,
Sinclair Prairie Pipe Line Company

★

Sinclair Prairie Pipe Line Company of Texas

OWNS AND OPERATES EXTENSIVE SYSTEM IN THE STATE

SINCLAIR PRAIRIE PIPE LINE COMPANY (of Texas) came into existence during March, 1932, and has operated exclusively in Texas as a wholly owned subsidiary of Sinclair Prairie Pipe Line Company with general offices at Independence, Kansas.

Previous to 1932, the present system found its start in the purchase by Humphreys Pure Oil Pipe Line Company from Humphreys Mexia Company of 37 miles of field lines in Mexia pool, supplemented by an eight-inch gathering line to Teague, Texas. This transaction took place in 1922. In addition to this service, an eight-inch trunk line was constructed from Teague to Smiths Bluff, including three stations and terminal on Neches River, where a refinery was constructed by Humphreys Pure Oil Company.

In 1924, an eight-inch line extending from Powell station to Colonels station

GOVERNMENT COSTS EQUAL *one-third of all your pay*

"What!

One-third of all my pay for government?"

OF COURSE! Perhaps you didn't realize it. It's an expensive business running the national, state and local governments—the way spendthrift politicians waste YOUR money!

The cost equals almost 1/3 of *all* you earn, but that is supposed to be a secret! That's why they *hide* your taxes! Take bread, for example. 53 taxes are in every loaf. As for gasoline—40 to 60% of the price you pay goes for taxes.

The tax bill is so great EVERYBODY has to pay—the rich and the poor. (All the riches of all the rich people in the country wouldn't pay one year's taxes!) You just can't get away from it.

One-third of your weekly pay will keep on going for government unless you do something about it.

What to Do

Our annual taxes can be less, because the cost of government can be reduced.

It has been estimated that the true economy of statesmen, not the spending of self-seeking politicians, would reduce the nation's tax bill by BILLIONS of dollars. And, without sacrificing good government! We would still have money for ALL needed relief—all important projects.

It's up to you to bring your taxes down—by putting a stop to endless EXTRAVAGANCE and waste.

So make this resolution and keep it:

"I resolve to oppose every officeholder who cannot prove to me that he has used all his influence to reduce the cost of government."

Remember this resolution. You have all the power. You alone can oust political spendthrifts and put clear-headed lawmakers in their places.

Act Today

Don't wait. You can stop tax wasting QUICKLY! Write these three letters. Mail them today: *One to your* MAYOR *(or the County Clerk, if you live in the country). One to your* GOVERNOR. *One to the* PRESIDENT.

Write only one sentence in each letter and sign your name and address. Say: *"I want the cost of government reduced!"*

BUT DO IT TODAY! It's your job, Mr. and Mrs. Public. You alone can protect yourself. Don't fail. Let the wasteful spender know his game is up. Let's all help give America back to the people!

Write this letter today!

"I want the cost of Government REDUCED!"

MAIL COPIES OF IT TO:

1. Your Mayor (or your County Clerk)
2. Your Governor
3. The President of the United States

Space for this message is provided by *The Oil Weekly* because of a firm conviction that a reduced cost of government is vital to the interests of all its readers.

REGISTER—VOTE—*Give your support to candidates, regardless of party, who* WILL *cut the waste out of government.*

—Blank & Stoller

E. H. CHANDLER
Vice President,
Sinclair Prairie Pipe Line Company

was acquired from Atlantic Oil Producing Company. Gathering lines were constructed in Wortham and Richland areas with a six-inch extension from Huffman to Humble.

Early in this year, Humphreys Pure Oil Company became Pure Oil Pipe Line Company of Texas. This latter company constructed 58 miles of eight-inch line in four sections in 1925. Through purchase of all stock in this company, it became a wholly owned subsidiary of Prairie Pipe Line Company, although the name was not changed to Sinclair Prairie Pipe Line Company (of Texas) until March, 1932.

Certain acquisitions and construction augmented the facilities of this system, chief among which was the increasing of the capacity of its trunk line to Sinco refinery, near Houston, in 1933. Approximately 142 miles of 12-inch line was laid for this purpose and additional pumping equipment was installed.

Sinclair Prairie Pipe Line Company (of Texas) owns and operates more than 1560 miles of gathering lines in East Texas, Mexia, Gulf Coast area, Ranger, Wichita Falls and in the Texas Panhandle. Trunk line mileage is in excess of 1000 miles. Important junctions on the main line are located at Hensley, Ranger, Colonels (near Teague) from which point the main East Texas line joins the system, and Huffman and to a point near Houston at the Sinco refinery. The Houston ship channel tunnel is included in this system. In the Gulf Coast area, the trunk line extends from West Columbia and Boling pools to the Sinco refinery.

Executives of Sinclair Prairie Pipe Line Company (of Texas) are C. H. Kountz, chairman of the board, J. R. Manion, president, E. H. Chandler, vice president, Charles Fitzgerald, assistant to chairman and president, A. D. Sloan, general superintendent and C. R. Weidner, chief engineer.

—Blank & Stoller

CHARLES FITZGERALD
Assistant to chairman and president,
Sinclair Prairie Pipe Line Company

★

Standard Pipe Line Company, Inc.

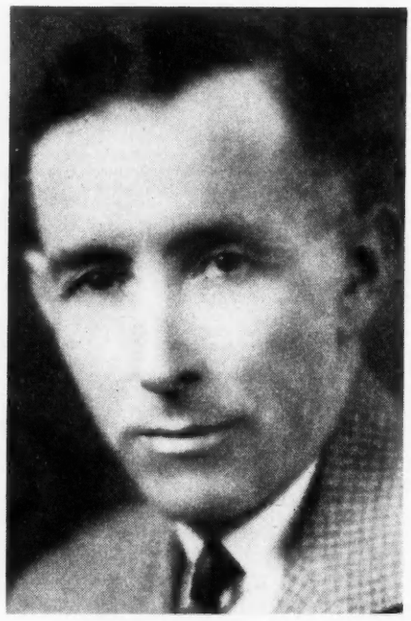
OUTGROWTH OF A LINE LAID DURING THE YEAR 1909

IN 1909, Standard Oil Company of Louisiana began the construction of its refinery at North Baton Rouge, Louisiana, on the east bank of the Mississippi River. Concurrent with this construction, there was laid an 8-inch pipe line from the North Baton Rouge refinery in a northwesterly direction to Ida, Louisiana, at which point the line connected with one being constructed by Prairie Oil & Gas Company, in Arkansas, lying between the points of Ida and DeQueen, Arkansas, at which latter point connection was made with a line being laid by Oklahoma Pipe Line Company, from the then producing oil fields in Oklahoma. This gave an outlet of 10,000 barrels per day for Mid-Continent crude to the Gulf of Mexico. This line was completed and put into operation in the spring of 1910. With this initial line construction, there were 4 pumping stations built on the Louisiana line, namely Ida, on the Arkansas-Louisiana state line; Moore Station, 7 miles south of Shreveport; Flora Station near Cypress, Louisiana, and Bunkie Station at Bunkie, Louisiana. In 1911, intermediate pumping stations were constructed at Oxford, Rapides and Melville, Louisiana.

With the development of the Caddo light oil field in 1910, the first gathering line system was constructed, consisting of a 6-inch line from a point on the trunk line system north of Shreveport, near Belcher, Louisiana, west into the Caddo field.

In 1913 gathering lines were extended into the Naborton-DeSoto-Crichton fields south of Shreveport, making junction with the trunk line at Oxford, Louisiana. Substantial tank farms were constructed at Moore and Oxford during 1913.

Beginning with 1912, on account of increased production in Oklahoma and north Louisiana, the original eight-inch trunk line was looped in order to increase its capacity. As production continued to increase in Oklahoma, north Louisiana and Arkansas pools, the trunk line was substantially increased during the years 1913, 1915, 1921, 1922, bringing the capacity ultimately to 120,000 barrels per day from Shreveport south to the North Baton Rouge



F. RAY McGREW
President,
Standard Pipe Line Company

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S. W. DAY
Vice President,
Standard Pipe Line Company

refinery, which capacity is still available. These increases in capacity were attained by rearranging 8-inch lines and the laying of 12-inch loops.

In 1919, due to the discovery of the Homer field, an 8-inch line was extended into that field. Later in 1921, this line was extended into Haynesville, La., and ElDorado, Arkansas, fields. Large tank farms were constructed in the Homer and Haynesville fields which have since been dismantled. In 1922 this line was extended into the Smackover, Arkansas, field. The original capacity of this line was 17,000 barrels per day and was increased until 60,000 barrels was reached. With the decline of these fields, the capacity of this line has been reduced in the various sections.

In 1925, with the heavy production of oil of low gravity in the Smackover field and the continued heavy flow of Oklahoma and North Louisiana crudes through the trunk line from Shreveport south, it became necessary to construct a 10-inch pipe line from the Smackover, Arkansas, territory east to the Mississippi River to Grand Lake, Arkansas, at which point heavy Smackover production was loaded on barges and handled to the North Baton Rouge refinery on the river by steamer tow. Due to the viscous character of the heavy Smackover crude it was necessary to specially construct this line and the pumping stations were located approximately 15 miles apart and each was equipped with heating facilities, as the oil could not be pumped to advantage under temperatures lower than 90 degrees. The capacity of this line so equipped was 50,000 barrels per day.

In 1930, due to the discovery of the East Texas field, 2 10-inch lines were extended west from Moore Station, near Shreveport, to the Louisiana-Texas state line, making connection with Humble Pipe Line Company.

In addition to the trunk line operations transporting East Texas, Van, Oklahoma, Arkansas and Louisiana crudes, Standard Pipe Line Company is gathering crudes in a number of fields.

The company occupies 594.48 miles of right of way; operates 1518.96 miles of trunk lines and 366.52 miles of gathering lines. It also operates a communication system consisting of telephone and telegraph lines of 1111.32 miles.

From the date the original line was constructed until January, 1923, the pipe lines were operated as a department of Standard Oil Company of Louisiana. In January, 1923, a common-carrier pipe line corporation was formed under the name of Standard Pipe Line Company, Incorporated.

The executive and operating offices are located in Shreveport, and the accounting personnel in Baton Rouge, Louisiana.

The officers of the corporation are: F. Ray McGrew, president; S. W. Day, vice president; H. T. Austermell, secretary-treasurer; J. A. Kunkle, general superintendent; and W. B. Fulton, chief of the engineering division.

W. B. FULTON
Chief of the Engineering Division,
Standard Pipe Line Company

★

Standish Pipe Line Company

OWNS TRUNK AND GATHERING LINES FOR THREE REFINERIES

CRUDE oil transportation of Phillips Petroleum Company, Bartlesville, is provided by Standish Pipe Line Company. The system consists of trunk lines and gathering systems for three refineries, one at Borger, Texas, one at Okmulgee, Oklahoma, and the other at Kansas City, Kansas. There are 616 miles of trunk lines and 669 miles of gathering system.

Longest of the trunk lines is from the Oklahoma City field to the refinery at Kansas City. This is a combination of 6-inch and 8-inch lines and loops. The line from Oklahoma City to Thrall station, Kansas, was built in 1933, 196 miles. At Thrall it was tied into the system of the old Independent Pipe Line Company of Kansas. A trunk line from western Kansas counties also ties into the line at Thrall station.

The gathering systems for this line are in the Oklahoma City pool, the older pools of eastern Kansas, while the new line to western Kansas connects with fields in Rice, Ellsworth, Barton and Russell counties.

Another trunk line extends from the Oklahoma City pool to the refining plant at Okmulgee. This is a combination of 8-inch, 6-inch and 4-inch lines, 111 miles long. The part of the line from Oklahoma City to the Seminole area was laid in 1932. At Seminole it was connected with the lines formerly built by Independent Pipe Line Company of Oklahoma, to connect the Seminole fields with the refinery.

The gathering systems for this line are in the Oklahoma City pool and in several of the pools of the Greater Seminole area.

Facilities for the refining plant at Borger, Texas, are listed as a gathering system. It consists of 282 miles of lines, which connect this plant with the several fields of the Texas Panhandle.

This transportation subsidiary of Phillips Petroleum Company was incorporated in 1933 and took over properties which had been operated by three pipe line concerns. When Independent Oil & Gas Company was merged with Phillips Petroleum Company, Independent Pipe Line Company of Oklahoma was a part of the transaction, as was Independent Pipe Line Company of Kansas. At that time the system in Oklahoma was a trunk line from the Seminole fields to the Okmulgee plant, while the Kansas system was a trunk line from Thrall to Kansas City with gathering facilities in the Thrall area of Kansas. In the Texas Panhandle crude oil was transported to the Borger plant by Bar-Tex Pipe Line Company.

These corporations were dissolved

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AMERICAN HEAVY-DUTY ROLLER BEARINGS DOMINATE!

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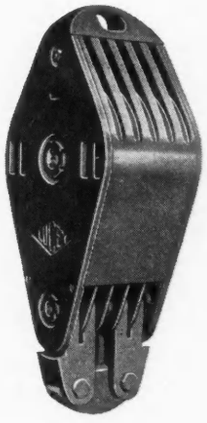

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American Roller Bearings *stand up* under the most severe strains and loads of deep drilling. Ask us for the answer to your bearing problem. The American Roller Bearing Company, Pittsburgh, Pa.

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Heavy Duty ROLLER BEARINGS

S. W. DAY
Vice President,
Standard Pipe Line Company

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The company occupies 594.48 miles of right of way; operates 1518.96 miles of trunk lines and 366.52 miles of gathering lines. It also operates a communication system consisting of telephone and telegraph lines of 1111.32 miles.

From the date the original line was constructed until January, 1923, the pipe lines were operated as a department of Standard Oil Company of Louisiana. In January, 1923, a common-carrier pipe line corporation was formed under the name of Standard Pipe Line Company, Incorporated.

The executive and operating offices are located in Shreveport, and the accounting personnel in Baton Rouge, Louisiana.

The officers of the corporation are: F. Ray McGrew, president; S. W. Day, vice president; H. T. Austermell, secretary-treasurer; J. A. Kunkle, general superintendent; and W. B. Fulton, chief of the engineering division.

W. B. FULTON
Chief of the Engineering Division,
Standard Pipe Line Company

★

Standish Pipe Line Company

OWNS TRUNK AND GATHERING LINES FOR THREE REFINERIES

CRUDE oil transportation of Phillips Petroleum Company, Bartlesville, is provided by Standish Pipe Line Company. The system consists of trunk lines and gathering systems for three refineries, one at Borger, Texas, one at Okmulgee, Oklahoma, and the other at Kansas City, Kansas. There are 616 miles of trunk lines and 669 miles of gathering system.

Longest of the trunk lines is from the Oklahoma City field to the refinery at Kansas City. This is a combination of 6-inch and 8-inch lines and loops. The line from Oklahoma City to Thrall station, Kansas, was built in 1933, 196 miles. At Thrall it was tied into the system of the old Independent Pipe Line Company of Kansas. A trunk line from western Kansas counties also ties into the line at Thrall station.

The gathering systems for this line are in the Oklahoma City pool, the older pools of eastern Kansas, while the new line to western Kansas connects with fields in Rice, Ellsworth, Barton and Russell counties.

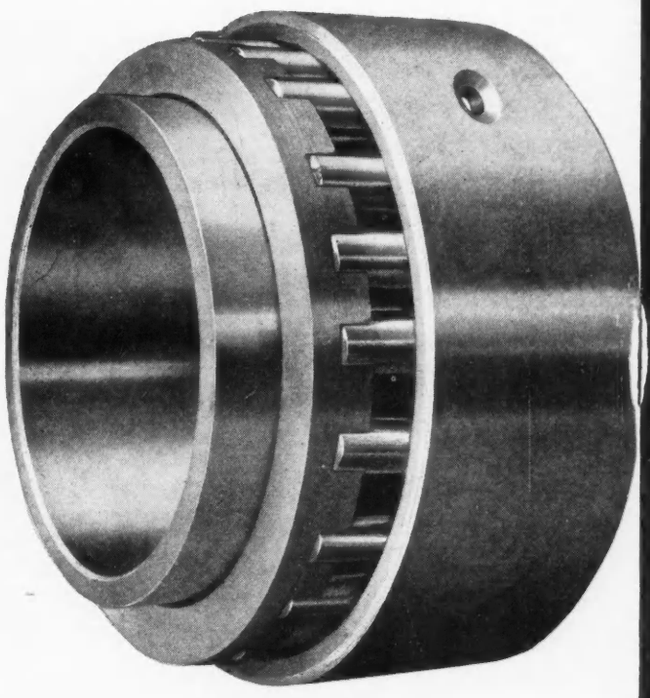
Another trunk line extends from the Oklahoma City pool to the refining plant at Okmulgee. This is a combination of 8-inch, 6-inch and 4-inch lines, 111 miles long. The part of the line from Oklahoma City to the Seminole area was laid in 1932. At Seminole it was connected with the lines formerly built by Independent Pipe Line Company of Oklahoma, to connect the Seminole fields with the refinery.

The gathering systems for this line are in the Oklahoma City pool and in several of the pools of the Greater Seminole area.

Facilities for the refining plant at Borger, Texas, are listed as a gathering system. It consists of 282 miles of lines, which connect this plant with the several fields of the Texas Panhandle.

This transportation subsidiary of Phillips Petroleum Company was incorporated in 1933 and took over properties which had been operated by three pipe line concerns. When Independent Oil & Gas Company was merged with Phillips Petroleum Company, Independent Pipe Line Company of Oklahoma was a part of the transaction, as was Independent Pipe Line Company of Kansas. At that time the system in Oklahoma was a trunk line from the Seminole fields to the Okmulgee plant, while the Kansas system was a trunk line from Thrall to Kansas City with gathering facilities in the Thrall area of Kansas. In the Texas Panhandle crude oil was transported to the Borger plant by Bar-Tex Pipe Line Company.

These corporations were dissolved



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Anywhere that service is heaviest in the oil fields —

AMERICAN HEAVY-DUTY ROLLER BEARINGS DOMINATE!

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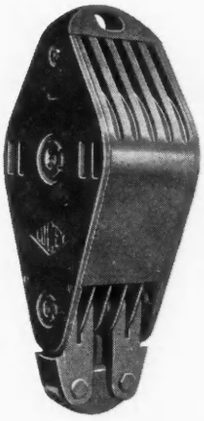


Wheland-Lucey Crown and Traveling Blocks. Seven other famous Block manufacturers use American Heavy-Duty Roller Bearings as standard.

Where service is *tough*—where loads are tremendous—where enormous strains and impacts are a matter of course—that's where American Heavy-Duty Roller Bearings are being used in preference to any other bearing. Actually *twenty-nine* leading manufacturers of heavy-duty drilling equipment use them as standard!

American Roller Bearings *stand up* under the most severe strains and loads of deep drilling. Ask us for the answer to your bearing problem. The American Roller Bearing Company, Pittsburgh, Pa.

Pacific Coast Office: 321 W. PICO ST., LOS ANGELES, CALIF.

★ AMERICAN ★

Heavy Duty ROLLER BEARINGS

and the properties combined into Standish Pipe Line Company. Officials of the concern are E. F. Guidinger, president; J. R. Harris, vice president; C. J. Logue, secretary-treasurer; R. T. Conwell, superintendent in Oklahoma; E. V. Kile, superintendent in Kansas; E. A. Ralston, superintendent in Texas; Fred Sierman, master mechanic.

Phillips Pipe Line Company operates the gasoline delivery system for Phillips Petroleum Company. This line from Borger, Texas, to East St. Louis, Illinois, 675 miles long, is restricted to gasoline delivery. A branch, 47 miles long, extends from the Kansas City Refinery to the mail line near the Missouri-Kansas line. The line was built in 1930 and put in operation in March, 1931.

★

Stanolind Pipe Line Company

OPERATES 5,000 MILES OF TRUNK LINES TO FOUR TERMINALS

STANOLIND Pipe Line Company, with general offices in Tulsa, is delivering purchased crude to Sugar Creek, Houston, Whiting and Wood River as major terminals. At present the system is comprised of nearly 5000 miles of grouped parallel arteries, traversing 2000 miles through portions of Illinois, Indiana, Iowa, Kansas, Missouri, Oklahoma, Nebraska, Texas and Wyoming. Six to 12-inch pipe is in general use on trunk lines, with pumping stations spaced from 35 to 40 miles apart, operating at relay pressures of 750 pounds and more.

Stanolind Pipe Line Company's first venture was the construction of a trunk line from Drumright, Oklahoma, to Chicago. Completed during the winter of 1917-18 under the name of Sinclair Cudahy Pipe Line Company, to handle the flush production of the Drumright gusher area, the line had a daily delivery capacity of 18,000 barrels of crude. Today, through combined facilities and expansion, the system has a daily capacity in excess of 125,000 barrels.

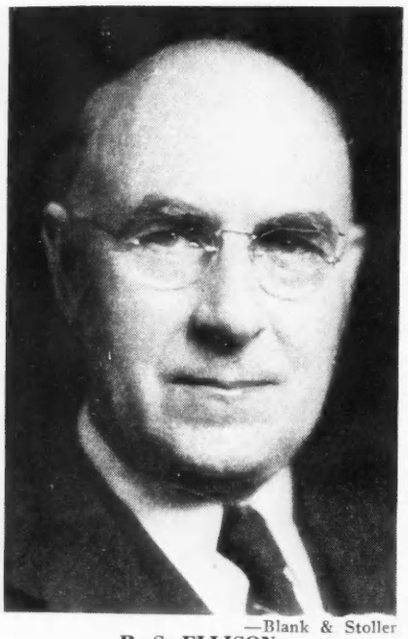
Present work consists mainly of extensions to new production areas in the states mentioned above, and the laying of more complete gathering systems. Constant operation necessitates the reconditioning of lines as well as pumping equipment. Modernization of both lines, gathering means, and pumping and adacent equipment is a continuous operation. A parallel telephone or dispatch system, 55,000-barrel receiving and storage tanks, and an operating staff pictures the modern setup.

—Blank & Stoller

A. L. CARLSON
Secretary and Treasurer,
Stanolind Pipe Line Company

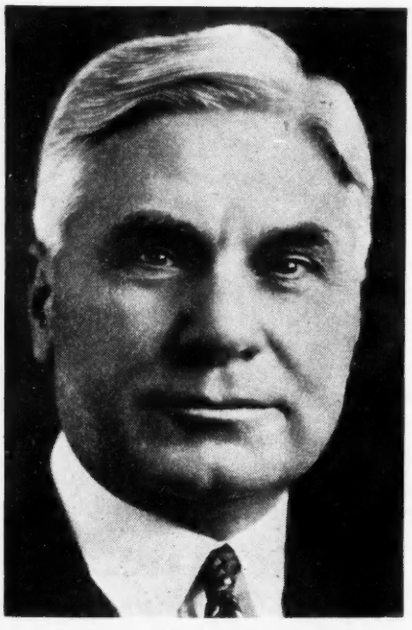
From the single artery of transportation to Chicago, Stanolind Pipe Line Company has progressively increased its facilities to extend from the Gulf of Mexico and the Rocky Mountains to the Great Lakes. One of the first major projects was the extension of the Oklahoma system into Texas, with a terminal at Houston. Since then other major trunk lines have been constructed and the capacity of some have

A. W. PEAKE
Chairman of the Board,
Stanolind Pipe Line Company



—Blank & Stoller

R. S. ELLISON
President,
Stanolind Pipe Line Company



EDWARD J. BULLOCK
Vice President,
Stanolind Pipe Line Company

TESTS that assure *long service* under severe conditions

For many years we have been using tests that assure accurate workmanship and long service

District Sales Managers

W. E. Gibson, 801 Columbia Bank Bldg., Pittsburgh, Pa.
J. P. Cooney, 715-716 A. G. Bartlett Bldg., Los Angeles, Calif.
J. P. Steele, 603 Petroleum Bldg., Fort Worth, Texas.

District Offices

South Chester Tube Co., 1708 Hudson Terminal Bldg., 30 Church St., New York, N. Y.
J. D. Swartz, 608 Beacon Bldg., Tulsa, Oklahoma.
E. L. Moseley, 2218 Mills St., Houston, Texas.
Burt S. Shafer, Southwest Representative, 4313 Fairfax Ave., Dallas, Texas, or 603 Petroleum Bldg., Ft. Worth, Tex.

District Warehouses

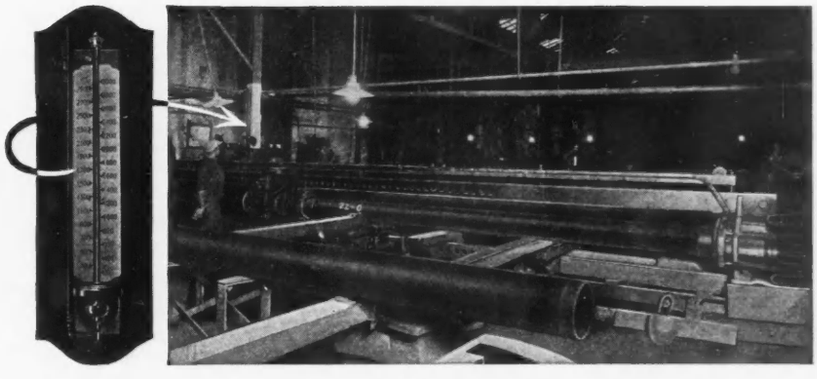
Houston, Texas; Thenard, Calif.; San Francisco, Calif.

Distributors

Western Supply Co., Tulsa, Okla. and Branches.
International Supply Co., Tulsa, Okla., and Branches.
Dunigan Tool and Supply Co., Breckenridge, Texas, and Branches.
Bridgeport Machine Co., Wichita, Kansas, and Branches.
Producers Supply and Tool Co., Marietta, Ohio; Fort Worth, Texas, and Branches.
Louisiana Supply Co., Sulphur and Brimstone, La.
Oil Field Equipment Co., San Antonio, Texas.
Okmulgee Supply Corp., Okmulgee, Okla., and Branches.
Stephen H. McCabe, 508 4th St., San Francisco, Calif.
Viking Automatic Sprinkler Co., 114 Sansome Street, San Francisco, Calif.
Herley Supply Co., 3006 Cherry Ave., Long Beach, Calif.
Barde Steel Co., Seattle, Wash., and Portland, Ore.
Star Drilling Machine Co., 550 Clinton St., Portland, Ore., and Akron, Ohio.
The Atha Supply Co., Zanesville, Ohio, and Mt. Pleasant, Mich.
United Pipe & Supply Corp., Charleston, W. Va., and Branches.
Bovaird & Co., Bradford, Pa.
Kane Supply Co., Kane, Pa., and Branches.
Prichard Supply Co., Mannington, W. Va., and Branches.
LeValley, McLeod, Kinkaid Co., Elmira and Olean, N. Y.

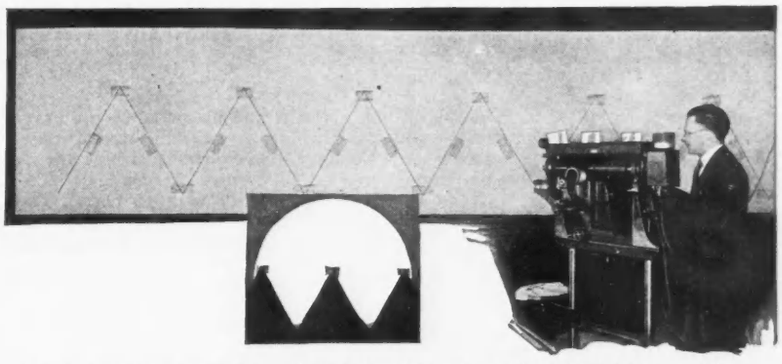
CAREFUL and exacting processes of manufacture and inspection *in the plant* assure unfailing service from Chester Casing, Pipe and Tubing *in the field*—where consistently dependable performance under severe conditions is fully appreciated.

Chester Products are as nearly perfect as modern machinery and experienced, skillful workmen can make them.



Chester uses mercury columns on its hydraulic testers, for the mercury column is as accurate as a thermometer.

An image of Chester threading, magnified 200 times, is thrown on a screen by means of a powerful projector. Frequent comparison of thread samples with a standard chart assures accurate and uniform threads.



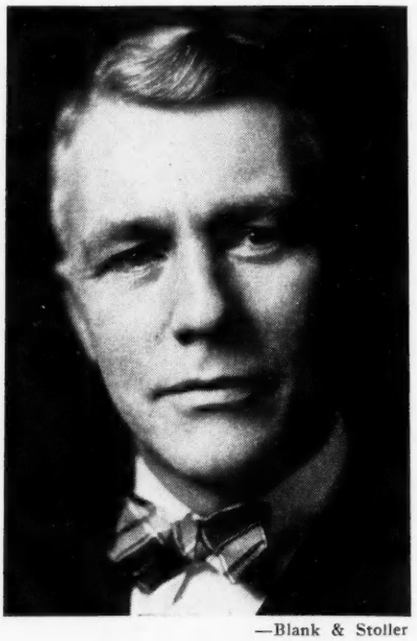
SOUTH CHESTER TUBE CO.
Chester, Penna.

CHESTER
STEEL CASING AND LINE PIPE

been increased through paralleling with equal or larger pipe.

Pointing the company's system to the northwest is the Casper, Wyoming, origin with gathering lines to Salt Creek, Big Muddy and other nearby production. A trunk line from this point terminates at the Freeman, Missouri, station. The southernmost terminal is located at Houston, with a main artery leading into East Texas and on into Oklahoma. The Kansas main system finds its source in Ellis County and leads south and east through the major pools of that state, to connect with the Kansas-Texas-Oklahoma system. This layout of lines is joined with the Chicago trunk line in western Missouri. Wood River, Illinois, is at the end of a branch trunk line connecting with the Chicago trunk.

Stanolind Pipe Line Company has as its president, R. S. Ellison, who first became associated with the organization on November 15, 1930. Vice presidents are E. J. Bullock and B. P. Sibole. A. L. Carlson is secertary and treasurer. C. M. Scott, Jr., is chief engineer, and William G. Heltzel is general superintendent of the Operating Department. The board of directors is headed by A. W. Peake as chairman.



—Blank & Stoller

C. M. SCOTT, JR.
Chief Engineer,
Stanolind Pipe Line Company

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Sun Pipe Line Company

OUTGROWTH OF A COMPANY THAT WAS INCORPORATED IN 1889 TO LAY A SHORT LINE IN THE STATE OF OHIO

SUN Pipe Line Company received its start in 1889, when Joseph N. Pew and E. O. Emerson incorporated Sun Oil Line Company. In 1895, this company built a pipe line from its then new refinery at Toledo, Ohio, to what is now Wayne, then west to Mermill, Ohio. Later this line was extended to Fiffin. With various extensions from time to time, this system expanded until it totaled 260 miles in Ohio.

The company's next pipe line installation took place in Texas in 1901, under the name of Texas Transmit Company. A line was built from the Spindletop field to Sun Station on the Neches river, a distance of seven miles. In 1902, the company purchased a six-inch pipe from the Spindletop field to Sabine Pass a distance of approximately 35 miles. This provided a deepwater terminal for Spindletop oil.

Later the company purchased an eight-inch pipe line extending to Sour Lake, Texas, and this system now extends to Batson, Saratoga, Humble, Liberty, Dayton, Barbers Hill and Conroe fields.

Sun Pipe Line Company was formed in 1904 to operate pipe lines in Texas. Oil was discovered in East Texas in the fall of 1930, and in May, 1931, Sun Pipe Line Company started construction of a 10-inch line from Sun Station to the field, a distance of 200 miles.

Meanwhile the company had constructed a refinery at Yale, Oklahoma, and a pipe line system was laid in Payne and Creek Counties that totaled 116 miles.

In 1930, a company was formed to build a pipe line for gasoline shipments between Marcus Hook, where the company has a large refinery, and Cleveland, Ohio, with a branch extending north to Syracuse, New York. This line consists of 664 miles of six- and eight-inch pipe, and 68 miles of smaller branch lines. In Pennsylvania, Susquehanna Pipe Line Company is the operating organization; in Ohio it is Sun Oil Line Company, and in New York, Sun Pipe Line, Inc. A later gasoline pipe line development was the laying of a line from Toledo to Detroit.

★

The Texas Pipe Line Company

ITS FIRST LINE WAS LAID AT SPINDLETOP IN 1902

UNDER and by virtue of the provision of Chapter 31 of the General Laws of Texas, 1917, companies owning or operating oil pipe lines were required to incorporate separately such pipe lines. The Texas Company complied with the mandatory provisions and organized The Texas Pipe Line Company, a Texas corporation, on June 26, 1917, and conveyed to the pipe line company all its pipe line assets in Texas and Louisiana. Prior to the organization of the pipe line company, the pipe line system was operated as a department and plant facility of The Texas Company. Headquarters of the company are at Houston.

The first pipe line facility was installed in the spring of 1902 and consisted of a small pumping station located in the Spindletop field and a 6-inch pipe line from this station to Garrison, a distance of approximately 3 miles, where steel tankage had been erected to receive the oil. It was from this station and through this section of pipe line that the first barrel of The Texas Company's oil was transported.

In August, 1902, a 6-inch line from Garrison to Port Arthur was placed in operation and oil was pumped from the Spindletop station to Port Arthur and loaded direct in boats. This was prior to the erection of The Texas Company's Port Arthur refinery.

In 1903, a 6-inch line was constructed from Garrison to Sour Lake to receive oil from the Sour Lake field.

Early in 1905, upon discovery of the Humble field, the Port Arthur-Sour Lake line was extended to Humble, a distance of 52 miles. The following year a 6-inch line was constructed from the Evangeline, Louisiana, field to Lake Charles, a distance of 40 miles.

In 1907, the pipe line system was extended into Oklahoma by construction of 473 miles of 8-inch line from Humble, Texas, to Tulsa, Oklahoma.

In 1910 the system was extended into North Louisiana by construction of 192 miles of 8-inch line from Port Arthur to Shreveport, Louisiana.

In 1912, due to development in North Texas, a combination 6-inch and 8-inch line was constructed from West Dallas to Electra, a distance of 160 miles.

In 1918, an 8-inch line was constructed

Drill pipe on Arkansas' deepest well at Smackover. After finishing well, The Patterson-Ballagh Protectors have original diameter and the tool joints show no excessive wear. Casing is undamaged.

Arkansas' Deepest Producing Well

PATTERSON-BALLAGH PROTECTED

ARKANSAS now boasts a new deep drilling field, actually producing from a depth in excess of 5,000 ft. This new record was attained with the aid of Patterson-Ballagh Protectors.

The big majority of deep wells drilled during the past eight years was equipped with Patterson-Ballagh Protectors indicates the absolute necessity for this dependable product. Fresh stocks are carried in all principal fields for immediate delivery.

The casing in all the deepest wells in the following states have also been protected with Patterson-Ballagh Protecters.

Deepest well in Texas
Deepest well in Oklahoma
Deepest well in Louisiana
Deepest well in New Mexico
Deepest well in California
Deepest well in Wyoming
Deepest well in Colorado

The deepest wells drilled to date in Mexico and Canada also have been protected with our product.

PATTERSON-BALLAGH PROTECTORS

PATTERSON-BALLAGH CORPORATION

PLANT AND GENERAL OFFICES:

1900 East Sixty-Fifth Street, Los Angeles, Calif., U. S. A.

New York Office: 39 Cortland Street
Oklahoma Office: Oklahoma City, 1704 N.W. 17th Street
Texas Office: Houston, 515 M. & M. Building
California Warehouse Stocks: Los Angeles, Kettleman Hills, Bakersfield, Ventura

from West Dallas to Ranger, a distance of 113 miles, due to development of production in the North Central Texas area.

In 1923, developments in Arkansas justified construction of 91 miles of 10-inch line from Louann, Arkansas, to Shreveport, Louisiana.

In 1928, the West Dallas-Electra line was extended from Electra to the Panhandle area, consisting of 153 miles of 8-inch pipe, and to increase capacity south of Electra, there was constructed 30 miles of 8-inch line from Corsicana to San Augustine. In the summer of 1929, construction of 547 miles of 10-inch and 12-inch line from Houston to West Texas, with a branch 6-inch line extending from San Marcos to San Antonio was completed. The West Texas line was later extended into Lea County, New Mexico, providing 55,000 barrels daily capacity out of West Texas and New Mexico.

In 1930, a 6-inch branch line was constructed from Rosanky (a junction on the West Texas line) into the Darst Creek pool.

With the discovery of the East Texas field in 1931, a 10-inch line was extended from Douglass, Nacogdoches County, (a junction point on the Corsicana-San Augustine 8-inch line which had been constructed in 1928) to Munro, Gregg County, a distance of 56 miles. During the same year, additional pump stations and loops were constructed between Shreveport and Port Arthur, a distance of 197 miles; also 31 miles of 8-inch branch line from Houston to Texas City. In 1931, another 6-inch branch line was extended from Iraan station to the Texon field in Reagan County, Texas.

In 1932, a combination 4-inch and 6-inch line was constructed in Southern Louisiana from the Port Barre field to West Baton Rouge, a distance of approximately 45 miles.

In 1933, some gathering lines with small sections of trunk lines were constructed in Refugio, Duval, Jim Hogg, Zapata, and Nueces Counties, Texas.

During the first half of 1936, a 6-inch line was extended from Oil City, Louisiana, to the Rodessa, Louisiana, field, a distance of approximately 15 miles, with extension into Cass County, Texas. During the same period 4-inch and 6-inch branch lines were extended from the Markham-Bay City area, Matagorda County, to serve the Louise, Mauritz, Pickett Ridge, and Withers pools in Wharton and Jackson Counties, Texas.

As of June 30, 1936, The Texas Pipe Line Company had in operation approximately 5250 miles of various size trunk, loop, branch and gathering lines serving most of the fields in Texas, New Mexico, Louisiana and Arkansas, and was transporting approximately 180,000 barrels of crude oil daily.

The officers are: B. E. Hull, president and manager; A. S. Bailey, vice president and assistant manager; T. J. McMahon, vice president and superintendent of operations; R. B. McLaughlin, secretary and treasurer; G. W. Cox, assistant to president and assistant secretary; J. W. Emison, assistant treasurer; J. L. Culbertson, chief engineer; J. B. Alleman, superintendent, East Texas division; O. R. Burden, superintendent, North Texas division; C. O. Crouch, superintendent, South Texas division; and E. H. Davidson, superintendent, West Texas division.

—Blank & Stoller

J. K. McGOLDRICK
President, The Texas Pipe Line Company of Oklahoma

★

The Texas Pipe Line Company of Oklahoma

SYSTEMS AGGREGATE 1275 MILES IN THE STATE

IN 1907, The Texas Company constructed 169 miles of 8-inch main line from Tulsa, Oklahoma, to a junction with its lines in Texas at Red River, near Sherman. This line with extensions was transferred to The Texas Pipe Line Company of Oklahoma in 1917, operating in the state of Oklahoma only. The facilities of the latter company, including branch lines, loops, and gathering systems serving most of the producing areas in Oklahoma, now aggregate a total of 1275 miles of pipe line.

The officers of The Texas Pipe Line Company of Oklahoma are: J. K. McGoldrick, president; B. E. Hull, vice president; J. H. Hill, vice president; H. L. Stewart, secretary and treasurer; T. R. Reagan, superintendent, northern division; and C. M. Shull, superintendent, southern division.

★

The Texas-Empire Pipe Line Company

SYSTEM IS LARGE ALTHOUGH COMPARATIVELY NEW CONCERN

IN 1928 The Texas-Empire Pipe Line Company, owned jointly by The Texas Corporation and Empire Gas & Fuel Company, was organized and in 1929 constructed 57 miles of 10-inch and 678 miles of 12-inch pipe line from Seminole via Cushing, Oklahoma, to East Chicago, Indiana, with 130 miles of 8-inch branch line from Heyworth to Lawrenceville, Illinois, and 21 miles of 6-inch branch line from Wilmington to Lockport, Illinois. The main 12-inch line had a daily maximum capacity of 50,000 barrels. In 1930 additional pumping stations were erected, which increased daily capacity to 72,000 barrels. Headquarters of the company are in Tulsa.

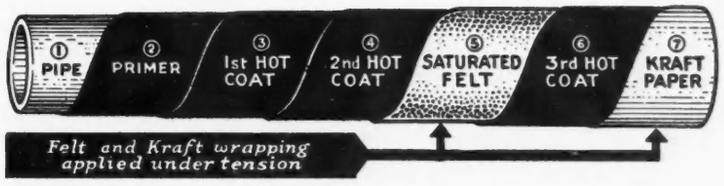
Construction of 144.5 miles of 10-inch welded pipe line from Valley Center via El Dorado, Kansas, to Sheldon, Missouri, and loops comprising 196.4 miles of 12-inch welded line between Sheldon, Missouri, and East Chicago, Indiana, with additional tankage and auxiliary equip-

PIPE PROTECTION

MILL APPLIED by the Hill-Hubbell Process

The Scientific and Economical Way

Since August 1928, when Hill, Hubbell & Co., Division General Paint Corporation installed its first plant for the coating and wrapping of pipe at the mills by its mechanical process, it has coated, wrapped and shipped 7,000 miles, or more than 26,000 carloads of pipe. It has been proven that coatings and wrappings applied mechanically at the pipe mills by our skilled workmen stand up better and give longer protection to pipe than coatings and wrappings applied in the field under open-air and field conditions.



ADVANTAGES

The diagram indicates our method of mechanically coating and wrapping pipe at the mills. All work is done indoors, under ideal atmospheric conditions, regardless of weather, free from moisture and condensation thus eliminating bubbles, skips and holidays between the bare pipe, primer and subsequent coats. Scientific application and accurately controlled temperatures insure consistency of chemical properties of the bitumen.

THE PROCESS

Mechanical coating and wrapping of pipe is accomplished complete in a single operation as the pipe passes continuously in a spiral movement through the machines. The primer coat applied to the bare pipe furnishes a binder for the first coat of hot bitumen. The second coat of hot bitumen applied while the first coat is still hot, and simultaneously with the wrapper causes the two to blend in a solid coating of uniform thickness. The third coat if specified, is applied simultaneously with, and on top of, the spiral wrapping of felt, to form a solid cohesion with the other coating. Heavy kraft paper as a final wrapping prevents joints from sticking, eliminates necessity of white-washing and permits handling as "regular" pipe.

PATENTED LOADING METHOD

Our patented loading method which insures against damage to pipe or coating in transit, consists of securely tying the lengths of pipe into a single bundle, which prevents damage from vibration or shifting of load. All pipe is nested in padded bottom and side frames and tightly bound in steel bands.

ANY SIZE PIPE

We are successfully coating and wrapping all sizes of pipe from ½" to and including 30".

ANY KIND OF JOINT

Pipe is coated and wrapped for welded, patented couplings or threaded and coupled joints.

ANY OF THESE MILLS

Our coating and wrapping machines and skilled crews are maintained in the following pipe mills:

Central Tube Company.
Jones & Laughlin Steel Corp.
National Tube Company.
Republic Steel Corporation.
Spang, Chalfant & Co., Inc.
The Youngstown Sheet & Tube Co.

CHOICE OF MATERIALS

In addition to Biturine Pipe Line Enamel—our own coating backed by 30 years of successful pipe line usage—we maintain at the pipe mills, stocks of the standard brands of pipe line coatings and felt wrappers. We apply what you specify.

Mechanical application at the mill adds years to the life of any coating.

Write for instructive illustrated book on pipe protection, specifications and price list.

AVOID THESE HAZARDS

DUST

RAIN

SNOW

WASTE

DEW OR FOG

UNBONDED FELT

HILL, HUBBELL & CO. - - DIVISION

GENERAL PAINT CORPORATION

SAN FRANCISCO LOS ANGELES OAKLAND PORTLAND SEATTLE SPOKANE DENVER TULSA

IN ILLINOIS: **HILL, HUBBELL & COMPANY** CHICAGO, ILLINOIS

ment, to further increase daily capacity to 92,000 barrels, was completed during August of this year.

The system now comprises 1,243.44 miles of pipe line.

The officers of The Texas-Empire Pipe Line Company are: B. E. Hull, president; F. K. Haskell, vice president; F. A. Stivers, vice president and general manager; H. L. Stewart, secretary and treasurer; G. W. Fox, assistant to president; B. A. McKerren, assistant secretary; C. E. Murray, assistant secretary; C. D. Ruff, assistant treasurer; J. L. Culbertson, chief engineer; W. H. Shields, superintendent, southern division; and J. H. O'Brien, superintendent, northern division.

★

Tide Water Pipe Line Company, Ltd.

CONCERN WAS A PIONEER IN THE TRANSPORTATION OF OIL BY MEANS OF PIPE LINES

TIDE WATER PIPE COMPANY, Ltd., was organized in November, 1878, to meet the urgent requirement for more adequate transportation of crude from Pennsylvania fields to refineries on the Atlantic seaboard. Transportation became the great problem of the oil industry, shortly after discovery of oil at Titusville in 1859. Solution of this problem by means of pipe lines met with determined opposition and was successful only after a long, bitter fight.

In 1874, the Columbia Conduit Line, a 3-inch system with capacity of 3500 barrels per day, was laid transporting crude directly from wells to a refinery near Pittsburgh. Being attracted to the possibilities in the pipe-line industry, the firm of D. McKelvy & Company leased and operated this line which was sold in 1877, to a major company.

With other associates, they then formed the Tide Water Pipe Company, Ltd., November 13, 1878, under the Limited Liability Partnership Act of Pennsylvania, as at that time no other laws existed under which a pipeline company could be formed without a special charter, and the name "Tide Water" was chosen to convey the fundamental plan then in mind to transport oil directly to the Atlantic seaboard to refineries at Baltimore, Philadelphia, and New York.

For this purpose, it was decided to construct the line with 6-inch pipe. Up to this time 3-inch had been the largest size used in pipe-line work, and would not have sufficient capacity. This required new specifications for fittings, valves, laying tools, etc., suitable for 6-inch work. New type pumping equipment also was required, resulting in a triplex pump driven by a separate steam engine. These units operated with greater efficiency and a more uniform line pressure than obtained from the direct-acting pumps formerly used. Three stations, partially equipped with this type of machinery, are still in service, and their costs compare favorably with stations equipped with units of modern design.

This initial 6-inch line was 102 miles long with the first station at Coryville, Pa., taking crude directly from the Bradford field. It pumped to an intermediate station 22 miles further east, which delivered to a railroad terminal at Williamsport, Pa., 80 miles distant. The line was laid with 6-inch wrought-iron pipe in 17-foot to 20-foot joints. Manufacturing companies started pipe shipments January 30 and February 12, 1879.

The installation was successful and, on May 28, 1879, the pumps were started, the line having a capacity of 10,000 barrels per day, thereby making entirely practical the long-distance transportation of crude in large quantities by pipe line. By the use of this line, it was possible to greatly reduce the over-all freight costs from the Bradford field to New York. This reduced cost of oil transportation was an important impetus to the entire oil industry, and warranted an increased investment in pipe lines, fundamentally justifying this part of the industry as it is today.

The original delivery of oil was made at Williamsport into tank cars of the Reading Railroad. A gathering system was installed in the Bradford and adjacent oil fields, this system continuing until September 8, 1929, when the facilities were merged with those of two other companies forming Bradford Transit Company, now the largest gatherer of Pennsylvania-grade crude.

In 1882, the second step was taken to extend this 6-inch line to the Atlantic seaboard by the construction of a line from Williamsport to Tamenend, Pa. In 1888, the line was finally extended to Bayonne, N. J., completing the delivery of Pennsylvania-grade crude by pipe line to the Atlantic Coast refineries. This line had met the challenge of mountainous laying conditions, overhead river crossings with suspension bridges, and crossings under ocean channels.

Increasing demand for Pennsylvania-grade crude necessitated continued looping of this line until, in 1918, a complete and second 6-inch line had been laid, the line distance between the Bradford field and the coast being 285 miles.

With the discovery of oil in Illinois, a 6-inch line was extended west from the Bradford field station, Rixford, Pa., to Stoy, Illinois, a distance of 546 miles and completed in 1909. Each of the 14 stations along this line were equipped with Diesel engine-driven pumps. This made it possible to pump Illinois and Mid-Continent crude east to intermediate points and the Atlantic coast.

At the western terminus at Stoy, Illinois, the company now connects with Illinois Pipe Line Company and Texas-Empire Pipe Line Company, and gathers Illnois crude on its own system in adjacent producing fields. Mid-Continent crude is transported on its own system in adjacent producing fields. Mid-Continent crude is transported to Rixford, Pa., where it is delivered to connecting carrier, Northern Pipe Line Company.

The Eastern Division of this company now transports only Pennsylvania grade crude from the northwestern Pennsylvania fields to the Atlantic seaboard.

The total mileage of the trunk line of Tide Water Pipe Company, as of December 31, 1934, was 1245 miles.

M. D. Harris is the present president of the company. Other officers are: C. W. Morrison, vice president and general manager; K. R. Hankinson, treasurer; W. J. Burker, secretary; and J. Z. Van Tine, assistant secretary and superintendent.

The Texas-Empire Pipe Line Company

THE TEXAS-EMPIRE PIPE LINE COMPANY OF TEXAS is owned jointly by The Texas Corporation, Empire Gas & Fuel Company, and Tide Water Oil Company, and its facilities consist of 204 miles of 12-inch pipe line from the East Texas field to Port Arthur, capacity 74,000 barrels daily, with Diesel engine-driven centrifugal pump stations at Nettleton, Rieber, Douglass, Diboll, Warren and Sour Lake. This line was completed and started operating less than five weeks after first shipments of pipe were received on the job in August, 1931. Headquarters are at Tulsa.

The officers of The Texas-Empire Pipe Line Company of Texas are: H. R. Straight, president; F. K. Haskell, vice president and manager; F. A. Stivers, vice president and general superintendent; George Kinter, vice president; H. L. Stewart, secretary and treasurer; and E. L. Newman, superintendent.

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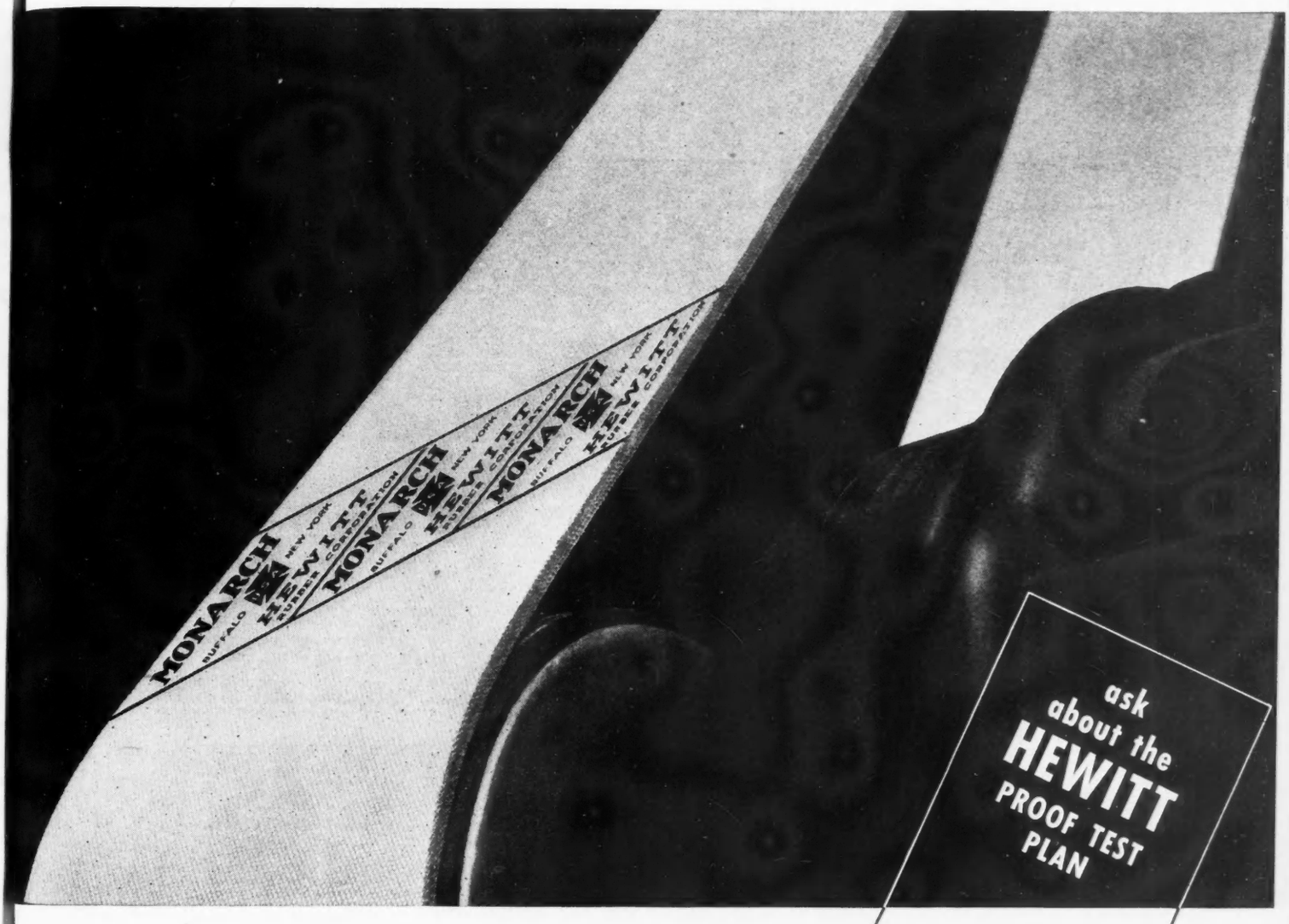

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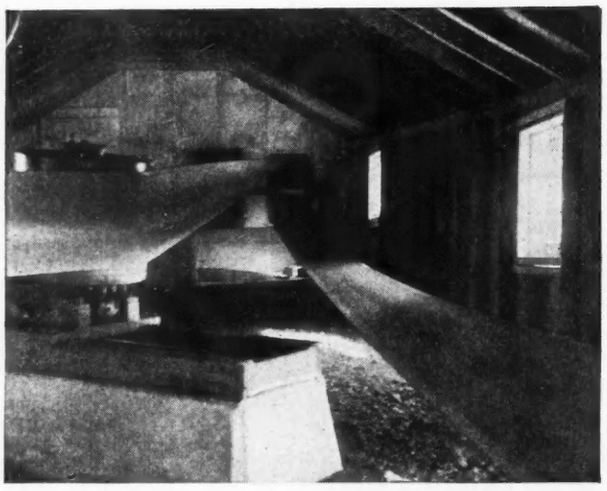

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last longer, increase production, cut costs, reduce down time

Every oil man knows that endless belts reduce down time as much as 80%, increase production accordingly, outlast fastener-joined belts many times, save time and worry. But you don't use them because they take weeks to get.

Now You Can Get Endless Belts in Few Hours

Goodrich has perfected a new method—belts can be made endless on your drives or in the shop of your Goodrich Distributor in a few hours depending on size of belt. This is the Plylock Method—using a patented splice that will last longer and stand more punishment than any other splice or any factory-made endless belt.

Any mechanic can learn in an hour how to make the Plylock Splice. Only equipment needed is a few simple tools and a portable electric vulcanizer.

Plylock permanently protects the splice from wear and windage—*it will not open up.* With this new splice belts have lasted as much as 20 times longer than any previous belt of any make. Cut *your* down time—increase your production—reduce belt cost—banish fastener trouble and danger. Send for prices, complete data and location of nearest Goodrich Distributor with Plylock vulcanizing equipment.

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Without obligation, send me prices and data on Plylock and address of nearest Distributor equipped to supply me.

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My name _____

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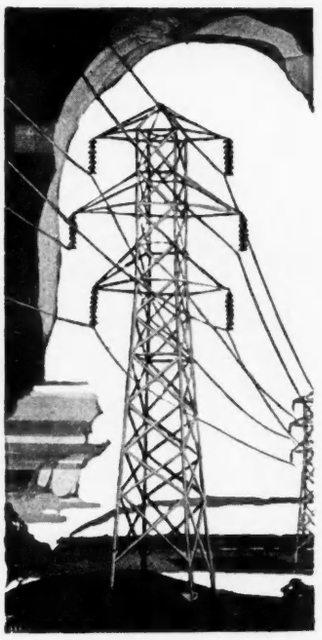

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GULF STATES

UTILITIES COMPANY

General Offices:

BEAUMONT, TEXAS **LAKE CHARLES, LA.**

Demand Holds

GASOLINE CONSUMPTION TAKING UP RECORD CRUDE OIL OUTPUT

THE refined market was jittery at times during last week but its slight fluctuations apparently were caused by the turbulence of the large flow of finished products to consumers. Production of crude and refinery operations continued at record levels without additions to storage, and this in the face of some conditions that are not favorable. The drouth situation in one of the most important consuming districts of the country is known to be having an adverse effect upon consumption of gasoline because of restricted income and upon tractor fuels because farmers have little to harvest and hesitate on plowing until they get some moisture. How soon higher living costs in the cities (the spread of the influence of the drouth) will have an effect upon gasoline use is a problem for pessimistic consideration, as is anticipation of the seasonal drop in motor fuel demand that comes after Labor Day.

Since the oil business in large measure has disregarded its usual controlling influences during the present season of high consumption, there is no certainty that the off-season use of motor cars will show such decline as in other years. And it is practically certain that regardless of what the weather is during the coming winter, better general conditions will bring about exceedingly good demand for fuels.

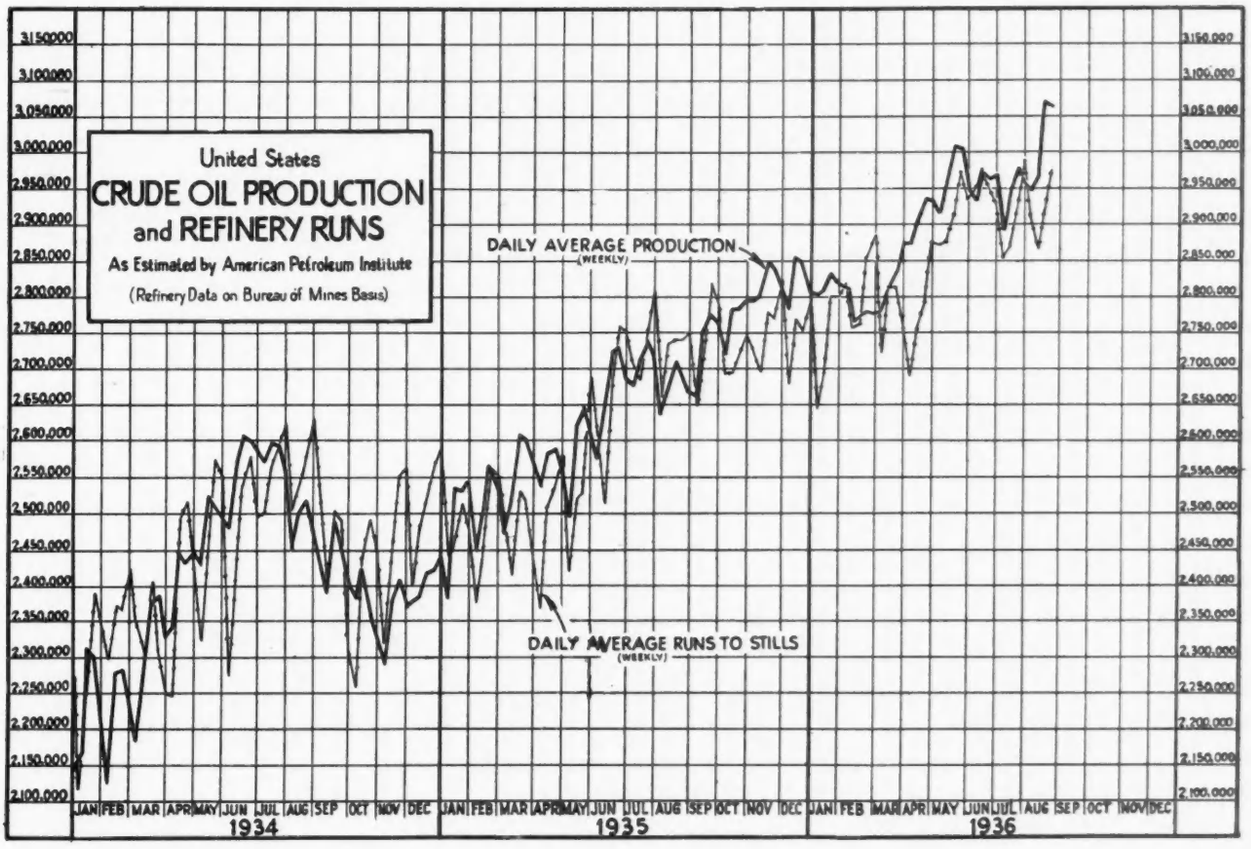
There was little trading in gasoline last week, the heavy movement being on contracts, and this volume was increased as jobbers' tanks were being filled in anticipation of the expected demand of the Labor Day holiday. Spot buying increased slightly as the week progressed and there were reports of some slight price shadings, but in the main prices remained unchanged. Kerosene was steady and in more active demand. Light fuel oils are showing expected strength and increased price offerings have brought out only a limited amount, as refiners are not disposed to sell at this time either for immediate or future shipment.

Mid-Continent Prices

Late last week the prices prevailing on U. S. Motor gasoline f. o. b. Oklahoma refineries appeared to be about as follows: 62 octane and below, 4¾ to 5 cents; 63 to 67 octane, 5¼ to 5⅝ cents; and 68 to 70 octane, 5¾ to 6 cents.

In the Chicago market, the minimum price on 62 octane and below held at 4⅝ cents a gallon while the maximum quotation on that grade was unchanged at 5 cents. The 63-67 octane was priced at 4⅞ to 5½ cents, and the 68-70 octane at 5½ to 6 cents. In East Texas fully-tendered third-grade gasoline remained unchanged at 4¾ cents a gallon, although lower prices prevailed on similar material not supported by federal tenders, and going into intra-state traffic by tank car or truck.

Kerosene was unchanged in the Chicago market. The 41-43 water white grade was quoted at 3 to 3¼ cents a gallon, and the 42-44 water white



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Little free crude is available in California

THE demand on the part of certain producers for premiums ranging up to as high as 25 cents a barrel for spot deliveries of light refinable crude is making the going rather hard for a few small independent refineries without enough production. Some of the smaller producers are demanding two-year contracts at a small premium. Such demands are not to the liking of several refiners and some of them are closing down their plants.

A very large part of the crude production in the state is moving to pipe line purchasers on contracts at the prevailing posted price, leaving little free crude for the spot market. The same is true for natural gasoline, which is also selling on spot movement at small premiums. Light refinable crude stocks were off nearly 500,000 barrels in July, while stocks of heavy crude including fuel oils were up slightly better than 900,000 barrels.

The arrival of a cargo of East Texas gasoline at Los Angeles was disconcerting to California marketers, but since this gasoline is being unloaded at a price rumored to be about 6.5 cents a gallon delivered, without tax, there appears little need to worry. The tanker arrived in Los Angeles August 26 and 11,000 barrels of gasoline was unloaded and the tanker then proceeded to San Francisco, where more gasoline will be unloaded.

East Texas Tank Car Shipments

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Distillate	42	326,680
Crude Oil	35	312,786
Gas Oil	17	143,979
Residuum	12	97,077
Kerosene	9½	73,927
Naphtha	4	32,419
Total	1,179	10,006,511
Total Previous Week	1,398	11,820,371
Intrastate	438	.....
Interstate	411	.....
Coastwise	330	.....
Total	1 179	.....

OKLAHOMA CRUDE
No lag in demand when output is at high level

FOR all of the 600,000 barrels oil that is coming out of Oklahoma fields daily plus the 175,000 barrels being produced in Kansas the Mid-Continent crude oil market shows no sagging. It is all moving without the expected shunning of connections to new wells or the shifting of wells from one company to another.

The trend in Oklahoma will be determined by potential tests to be taken in September. On these proration allowables will be based for the six months beginning October 1. Oklahoma City is expected to show some drop from existing potential figures. Wells of the north extension frequently were retested to get higher potential figures upon completion. Now these new wells, as well as the older part of the field, must go into a testing period without the benefit of flush gas output and its attendant favorable pressure. Early wells there frequently reached or surpassed the charmed 20,000 barrels daily on potential rating. This gave them substantial allowable on a basis of 4.5 percent of potential. The drilling campaign of the north extension has declined to the point new wells will add but little to the Oklahoma City output after September.

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Crescent, where wells are being drilled to the second Wilcox sand, is another pool of small area. It had but 32 wells in the upper Wilcox. New production from that source will not reach harmful totals.

The Fitts pool, Pontotoc County, is the fourth source of flush oil which permitted Oklahoma production to climb above 600,000 barrels daily. This field is more than three years old but has been under excellent scientific as well as legal control. Engineering practices will hold it in check should legal restraint be lax.

Lack of water is a general hamper against flush production in both Oklahoma and Kansas. Rigs dependent upon steam for power have the shut down designation opposite them in hundreds of instances on weekly scout reports. There is no longer surface water in the two states. Streams are at low ebb. Water wells involve deep drilling. Contractors are electing to shut down in the hope of fall rains rather than go to the expense of drilling deep water wells or running lines to streams. Thus field prospects and climatic conditions indicate a lessening of flush oil for the Mid-Continent.

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Arkansas	4	....	....	4	.....	70	93
California	16	12	....	4	4,075	720	568
Colorado	1	....	....	1	.....	8	8
Florida	....	....	....	....	.....	2	....
Illinois	....	....	....	....	.....	4	9
Indiana	6	....	3	3	.....	143	137
Kansas	27	20	....	7	35,855	1,086	925
Kentucky	7	6	....	1	392	191	111
Louisiana	22	16	3	3	20,521	690	508
Michigan	15	6	2	7	693	513	342
Mississippi	....	....	....	....	.....	5	14
Montana	6	3	2	1	275	99	108
New Mexico	24	23	....	1	58,412	379	189
New York	....	....	....	....	.....	....	....
Ohio	26	8	7	11	29	1,262	970
Oklahoma	66	43	6	17	83,396	1,960	1,578
Pennsylvania	....	....	....	....	.....	....	85
Texas	237	184	8	45	266,203	8,265	8,134
Utah	....	....	....	....	.....	....	1
West Virginia	18	6	7	5	37	449	322
Wyoming	6	6	....	....	1,787	52	46
Total this week	481	333	38	110	471,675	15,900	14,153
Total last week	485	331	53	101	456,958	....	....
Total this year	15,900	10,648	1,512	3,740	15,446,746	....	....

Comparison of Permits Granted for New Wells

STATE	Week Ending Aug. 29	Total this Mo.	Total this Year	Total this Date Last Year	1935 Year Total
Arkansas	3	10	65	32	70
California	26	113	679	617	925
Louisiana	29	102	789	552	846
Kansas	37	189	1,220	718	1,204
Michigan	15	78	495	399	749
Oklahoma	49	266	1,627	1,431	2,311
Texas	330	1,632	10,022	7,464	10,800
Total	489	2,390	14,897	11,213	16,964

PRODUCTION DOWN

Crude output averages 3,019,700 barrels daily

DAILY production of crude oil in the United States was slashed 31,692 barrels during the week ending August 29 to bring production down to 3,019,700 barrels, as against 3,051,392 barrels per day for the week ending August 22.

Although such a significant and commendable drop was anticipated due to the habit of Oklahoma and California of substantially lowering recoveries late each month, the daily average established during the week just closed leaves producers of the nation still shy 82,800 barrels of reducing their output down to the figure recommended by the United States Bureau of Mines, which for August was 2,936,900 barrels per day. On the other hand, if it had not been for California and Oklahoma, the country probably would have approximated the peak daily average figure of 3,061,075 barrels set during the week ending August 15.

Oklahoma, credited with a yield of 605,300 barrels per day during the week ending August 22, cut its production back to 572,300 barrels daily during the week ending August 29, a decline of 33,000 barrels per day. The restrictive effort of the state actually put Oklahoma production 2700 barrels per day under the recommended figure of 575,500 barrels per day.

California, the other state which helped the nation come a bit closer to the figure recommended as conducive to healthy relationship between supply and demand, production dropped from 575,000 barrels per day to 560,000 barrels. This was accomplished primarily through a cut of 10,000 barrels from the daily runs in the old Midway-Sunset area. Other reductions in miscellaneous fields of the state helped offset small gains in such areas as Ventura Avenue, Seal Beach and Kettleman Hills. While the state's effort at cutting down production this week leaves it still 10,000 barrels per day above the amount the United States Bureau of Mines figure, it is 15,000 barrels per day nearer that mark at the close of the week than the week ending August 22.

Texas production gained from 1,161,350 barrels per day during the week of August 22 to 1,167,900 barrels daily during the week just closed. With the exception of West Texas district, the increase was general throughout the state, due partly, no doubt, to the fact that 164 new producing wells with an initial production aggregating 266,203 barrels were added to the state's roster of producers. The above figures on Texas represent legitimate production and does not include the estimated 14,000 barrels per day of surreptitiously produced oil in East Texas field.

Kansas, which during August hewed fairly close to her recommended production figure of 166,500 barrels per day, stepped over the mark during the week ending August 29 by reporting a daily recovery of 172,450 barrels, or an increase of 5475 barrels per day over the previous week's average.

Louisiana registered gains in the northern and Gulf Coast sections, bringing the daily average up to 234,950 barrels as against 231,100 barrels the week previous.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Aug.)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING	
		August 29	August 22
Texas—			
Texas Panhandle	.....	62,300	60,800
North Texas	.....	61,000	60,200
West Central Texas	.....	26,500	26,250
West Texas	.....	180,700	181,100
East Central Texas	.....	60,100	59,250
*East Texas Field	.....	432,800	432,100
†South Texas	.....	86,000	85,350
†Texas Gulf Coast	.....	258,500	256,300
*Total Texas	1,154,700	1,167,900	1,161,350
OKLAHOMA—			
Oklahoma City	.....	135,050	156,900
Seminole Area	.....	132,100	139,375
Tatums	.....	3,500	3,325
Lucien	.....	12,800	12,750
Fitts	.....	65,175	68,850
Edmond	.....	13,400	13,700
Others	.....	210,275	210,400
Total Oklahoma	575,500	572,300	605,300
KANSAS—			
Ritz-Canton	.....	6,175	6,300
Voshell	.....	3,100	3,000
Nikkel-Hollow	.....	3,975	3,925
Sedgwick	.....	5,050	4,925
Burrton-Haury	.....	14,300	13,395
Lorraine	.....	8,025	7,900
Oxford	.....	3,500	3,525
Others	.....	128,325	123,425
Total Kansas	166,500	172,450	166,975
LOUISIANA—			
North Louisiana	.....	81,250	80,850
Louisiana Gulf Coast	.....	153,700	150,350
Total Louisiana	188,500	234,950	231,100
ARKANSAS	31,200	29,100	29,067
CALIFORNIA—			
Long Beach	.....	66,500	66,500
Santa Fe Springs	.....	44,500	44,500
Huntington Beach	.....	35,000	36,000
Dominguez	.....	25,000	26,000
Inglewood	.....	11,000	12,000
Ventura Avenue	.....	35,000	33,500
Seal Beach	.....	9,500	9,000
Midway-Sunset	.....	48,500	58,500
Elwood	.....	11,000	11,000
Kettleman Hills	.....	77,500	76,500
Mountain View	.....	26,500	26,500
Playa del Rey	.....	12,000	12,000
Others	.....	158,000	163,000
Total California	550,000	560,000	575,000
MOUNTAIN STATES—			
Wyoming	38,600	40,100	39,750
Montana	13,900	17,000	16,850
Colorado	4,700	4,900	4,700
Total Rocky Mountain States	57,200	62,000	61,300
NEW MEXICO	70,100	78,000	78,400
EASTERN STATES	110,800	112,000	110,500
MICHIGAN	32,400	31,000	32,400
*Total United States	2,936,900	3,019,700	3,051,392
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	.....	14,000	13,000
Grand Total, including surreptitious production	.....	3,033,700	3,064,392

† Coastal section of South Texas is included with Texas Gulf Coast.

grade to 3¼ to 3½ cents. In the Oklahoma market kerosene had fluctuated in narrow ranges during the week, the indicated prices being 3 to 3¼ cents for 41-43, and 3¼ to 3⅜ cents for 42-44 grades.

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Texas	237	184	8	45	266,203	8,265	8,134
Utah	....	....	....	....	.....	....	1
West Virginia	18	6	7	5	37	449	322
Wyoming	6	6	....	....	1,787	52	46
Total this week	481	333	38	110	471,675	15,900	14,153
Total last week	485	331	53	101	456,958	....	....
Total this year	15,900	10,648	1,512	3,740	15,446,746	....	....

Comparison of Permits Granted for New Wells

STATE	Week Ending Aug. 29	Total this Mo.	Total this Year	Total this Date Last Year	1935 Year Total
Arkansas	3	10	65	32	70
California	26	113	679	617	925
Louisiana	29	102	789	552	846
Kansas	37	189	1,220	718	1,204
Michigan	15	78	495	399	749
Oklahoma	49	266	1,627	1,431	2,311
Texas	330	1,632	10,022	7,464	10,800
Total	489	2,390	14,897	11,213	16,964

PRODUCTION DOWN

Crude output averages 3,019,700 barrels daily

DAILY production of crude oil in the United States was slashed 31,692 barrels during the week ending August 29 to bring production down to 3,019,700 barrels, as against 3,051,392 barrels per day for the week ending August 22.

Although such a significant and commendable drop was anticipated due to the habit of Oklahoma and California of substantially lowering recoveries late each month, the daily average established during the week just closed leaves producers of the nation still shy 82,800 barrels of reducing their output down to the figure recommended by the United States Bureau of Mines, which for August was 2,936,900 barrels per day. On the other hand, if it had not been for California and Oklahoma, the country probably would have approximated the peak daily average figure of 3,061,075 barrels set during the week ending August 15.

Oklahoma, credited with a yield of 605,300 barrels per day during the week ending August 22, cut its production back to 572,300 barrels daily during the week ending August 29, a decline of 33,000 barrels per day. The restrictive effort of the state actually put Oklahoma production 2700 barrels per day under the recommended figure of 575,500 barrels per day.

California, the other state which helped the nation come a bit closer to the figure recommended as conducive to healthy relationship between supply and demand, production dropped from 575,000 barrels per day to 560,000 barrels. This was accomplished primarily through a cut of 10,000 barrels from the daily runs in the old Midway-Sunset area. Other reductions in miscellaneous fields of the state helped offset small gains in such areas as Ventura Avenue, Seal Beach and Kettleman Hills. While the state's effort at cutting down production this week leaves it still 10,000 barrels per day above the amount the United States Bureau of Mines figure, it is 15,000 barrels per day nearer that mark at the close of the week than the week ending August 22.

Texas production gained from 1,161,350 barrels per day during the week of August 22 to 1,167,900 barrels daily during the week just closed. With the exception of West Texas district, the increase was general throughout the state, due partly, no doubt, to the fact that 164 new producing wells with an initial production aggregating 266,203 barrels were added to the state's roster of producers. The above figures on Texas represent legitimate production and does not include the estimated 14,000 barrels per day of surreptitiously produced oil in East Texas field.

Kansas, which during August hewed fairly close to her recommended production figure of 166,500 barrels per day, stepped over the mark during the week ending August 29 by reporting a daily recovery of 172,450 barrels, or an increase of 5475 barrels per day over the previous week's average.

Louisiana registered gains in the northern and Gulf Coast sections, bringing the daily average up to 234,950 barrels as against 231,100 barrels the week previous.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Aug.)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING	
		August 29	August 22
Texas—			
Texas Panhandle	.....	62,300	60,800
North Texas	.....	61,000	60,200
West Central Texas	.....	26,500	26,250
West Texas	.....	180,700	181,100
East Central Texas	.....	60,100	59,250
*East Texas Field	.....	432,800	432,100
†South Texas	.....	86,000	85,350
†Texas Gulf Coast	.....	258,500	256,300
*Total Texas	1,154,700	1,167,900	1,161,350
OKLAHOMA—			
Oklahoma City	.....	135,050	156,900
Seminole Area	.....	132,100	139,375
Tatums	.....	3,500	3,325
Lucien	.....	12,800	12,750
Fitts	.....	65,175	68,850
Edmond	.....	13,400	13,700
Others	.....	210,275	210,400
Total Oklahoma	575,500	572,300	605,300
KANSAS—			
Ritz-Canton	.....	6,175	6,300
Voshell	.....	3,100	3,000
Nikkel-Hollow	.....	3,975	3,925
Sedgwick	.....	5,050	4,925
Burrton-Haury	.....	14,300	13,395
Lorraine	.....	8,025	7,900
Oxford	.....	3,500	3,525
Others	.....	128,325	123,425
Total Kansas	166,500	172,450	166,975
LOUISIANA—			
North Louisiana	.....	81,250	80,850
Louisiana Gulf Coast	.....	153,700	150,350
Total Louisiana	188,500	234,950	231,100
ARKANSAS	31,200	29,100	29,067
CALIFORNIA—			
Long Beach	.....	66,500	66,500
Santa Fe Springs	.....	44,500	44,500
Huntington Beach	.....	35,000	36,000
Dominguez	.....	25,000	26,000
Inglewood	.....	11,000	12,000
Ventura Avenue	.....	35,000	33,500
Seal Beach	.....	9,500	9,000
Midway-Sunset	.....	48,500	58,500
Elwood	.....	11,000	11,000
Kettleman Hills	.....	77,500	76,500
Mountain View	.....	26,500	26,500
Playa del Rey	.....	12,000	12,000
Others	.....	158,000	163,000
Total California	550,000	560,000	575,000
MOUNTAIN STATES—			
Wyoming	38,600	40,100	39,750
Montana	13,900	17,000	16,850
Colorado	4,700	4,900	4,700
Total Rocky Mountain States	57,200	62,000	61,300
NEW MEXICO	70,100	78,000	78,400
EASTERN STATES	110,800	112,000	110,500
MICHIGAN	32,400	31,000	32,400
*Total United States	2,936,900	3,019,700	3,051,392
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	.....	14,000	13,000
Grand Total, including surreptitious production	.....	3,033,700	3,064,392

† Coastal section of South Texas is included with Texas Gulf Coast.

Crude Runs to Stills, Stocks of Finished and Unfinished Gasoline and Gas and Fuel Oil, and Cracked Gasoline Production, Week Ended August 22, 1936

(Figures in thousands of barrels of 42 gallons each as reported to American Petroleum Institute)

DISTRICT	Daily Refining Capacity			Crude Runs to Stills		Stocks of Finished and Unfinished Gasoline				Stocks of Gas and Fuel Oil			Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
		Reporting				Finished								Reporting		
	Potential Rate	Total	%	Daily Average	% Operated	At Refineries	Terms. Trans. Pipe Lines	Unfinished in Naphtha Distillates	Total Finished and Unfinished	Gas Oil & Distillate	Residual Fuel Oil	Total	Potential Rate	Total	%	Daily Average
East Coast	612	612	100.0	502	82.0	6,210	9,998	921	17,129	6,489	5,392	11,881	534	534	100.0	108
Appalachian	154	146	94.8	114	78.1	908	1,059	276	2,243	336	250	586	79	78	98.7	25
Ind., Ill., Ky	462	444	96.1	393	88.5	5,204	2,867	763	8,834	3,012	2,569	5,581	349	348	99.7	133
Okla., Kans., Mo	453	384	84.8	286	74.5	3,236	1,917	512	5,665	1,056	2,394	3,450	256	228	89.1	75
Inland Texas	330	160	48.5	114	71.3	1,015	128	199	1,342	387	1,348	1,735	148	105	70.9	32
Texas Gulf	680	658	96.8	632	96.0	4,450	241	1,815	6,506	4,478	4,088	8,566	399	393	78.5	153
Louisiana Gulf	169	163	96.4	135	82.8	1,189	432	251	1,872	1,208	1,052	2,260	77	74	96.1	34
North La.,—Ark	80	72	90.0	37	51.4	126	77	38	241	118	266	384	46	44	95.7	8
Rocky Mountain	97	60	61.9	52	86.7	885	.....	99	984	208	600	808	46	39	84.8	14
California	852	789	92.6	509	64.5	8,404	2,278	1,105	11,787	.....	.....	73,126	280	280	100.0	72
Reported	.....	3,488	89.7	2,774	79.5	31,627	18,997	5,979	56,603	.....	.....	108,377	.....	2,123	95.9	654
Estimated Unreported	.....	401	.....	201	.....	3,289†	793	438	4,468	.....	.....	2,251	.....	91	.....	41
Estimated Total U. S. August 22, 1936	3,889	3,889	.....	2,975	.....	34,864	19,790	6,417	61,071	.....	.....	110,628	2,214	2,214	.....	695
*Estimated Total U. S. August 15, 1936	3,889	3,889	.....	2,925	.....	35,379	20,055	6,519	61,953	.....	.....	110,795	2,214	2,214	.....	680
U. S. B. of M., August, 1935	.....	.....	.....	2,729	.....	†26,549	†19,383	†5,768	†51,700	.....	.....	†109,282	.....	.....	.....	606

* Bureau of Mines basis currently estimated. †As of August 31, 1935.

RANK WILDCAT
Eastern New Mexico test 100 miles from a field

Clovis, N. M.—Whether structural trends in West Texas and Southeastern New Mexico extend northward through Eastern New Mexico into the Denver Basin of Eastern Colorado, may be determined by a test now underway. Eighteen months ago, Wirt Franklin and an associate group of independent producers from the Mid-Continent, started a comprehensive geological survey of the region, which included the shooting of 250 miles of seismic profile that covered more than a million acres. The result showed a seismograph high to have been found in northwestern Roosevelt County, New Mexico, on what is now known as Franklin Dome, and the group blocked more than 20,000 acres of leases.

On July 22, Franklin Petroleum Corporation (of Texas) and associates spudded Dickenson 1, NW NW NW 28-3n-30e, approximately 38 miles northwest of Clovis and eight miles east of the town of Tolar in northwestern Roosevelt County and 100 miles from nearest production. All known producing horizons of New Mexico are to be penetrated and in the event that no production of commercial importance is found the test probably will be carried into the Pennsylvanian series. It is being drilled with cable tools by Van S. Welch and Martin Yates of Artesia and Barney Flynn of Wichita Falls, all well known independents. Early in the week operators cemented 700 feet of surface pipe and resumed drilling. From 35 to 122 feet the sands are conglomerates of Tertiary age, marked at the base by a widespread regional unconformity which also marks the eroded top of the Triassic. From 205 to 335 feet the formation is typical red Triassic shale. One of the controlling factors for structure in the area is the attitude of a fault which was revealed in the preliminary study. Since beds of Triassic age were found underneath the Tertiary, company geologists are convincted that the north side of the fault is the downthrown side as was assumed before drilling was commenced. Had the interpretation been in error the formation immediately below the Tertiary beds should have been either Cretaceous or Jurassic. Base of the Triassic was expected at or near 800 feet.

The nearest test which may be used to check structure is Claudell Development Company's Wilms 1, SW SW SE 21-2s-30e, about 23 miles to the south of Dickenson 1. This earlier test had a showing of oil at 1235 feet, a showing of gas at 2200 and 2250 feet, showings of wet gas at 2960, 2990 and 3099 feet, an oil showing at 3300 to 3340 feet and a showing of sulphur water at 3333 to 3340 feet. A hole full of water was encountered at 3660 feet and the hole abandoned in August, 1935, after passing through additional oil showings at 3345 to 3366 feet and 3628 feet. Elevation above sea level was 4585 feet.

Besides the parties actually involved in the drilling, other associated owners of the block are as follows: R. W. Fair, Tyler, Texas; E. L. Smith, Mexia, Texas; Frank Condon, Longview, Texas; Bert Aston, Overton, Texas; Bryan Payne, Tyler, Texas; Foster Minerals Corporation, Denver, Colorado; and Indian Territory Illuminating Oil Company, Bartlesville, Oklahoma. The block was assembled by Bert Aston who is in direct charge of the drilling operations and is making headquarters in Clovis. He was assisted in the preliminary work by Charlie Scheurich of that city.

125-MILE GAS LINE

Pittsburgh. — Peoples Natural Gas Company is building a 125-mile line to deliver 26,000,000 cubic feet of gas daily to Pittsburgh. The line runs from Truittsburg, Clarion County, to Hebron Township, Potter County, and from Clarion to Belknap in Armstrong County.

EDMOND GAS SYSTEM

Oklahoma City.—White Deere Pipe Line Construction Company has been the successful bidder on a pipe line project of Phillips Petroleum Company. The work will involve the laying of approximately nine miles of various sized acetylene welded pipe in a system to be built in connection with a natural gasoline plant to be built in the Edmond field of Oklahoma County.

Pampa, Texas.—Crude stocks in the Texas Panhandle were reduced 575,000 barrels during July, or at rate of 18,548 barrels daily, leaving 11,025,000 barrels on hand at the close of the month. Withdrawals so far this year amount to about 1,500,000 barres for this district.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to August 28, 1936)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28-$0.94	2¢	40—$1.18	1- 9-36
N. and N.-C. Texas	28— .84	2¢	40— 1.08	1- 9-36
Texas Panhandle				
Gray County	34— .86	2¢	40— .98	1- 9-36
Carson-Hutchinson	34— .81	2¢	40— .93	1- 9-36
West Texas				
Ector, Pecos, W'kler Crane, Upton, Howard and Glasscock	29— .76	2¢	36— .90	1-14-36
West Central Texas	28— .84	2¢	40— 1.08	1- 9-36
East Central Texas	28— .91	2¢	40— 1.15	1- 9-36
East Texas	*1.15			1- 9-36
Talco	* .60			4-15-36
Texas Gulf Coast				
Anahuac-Dickinson	30— 1.04	2¢	40— 1.24	1- 9-36
Conroe	35— 1.24	2¢	40— 1.34	1- 9-36
Tomball	*1.30			1- 9-36
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 17— .88	2¢	34— 1.22	1- 9-36
South and S. W. Texas	Below			
Refugio (Light)	17— .88	2¢	34— 1.22	1- 9-36
Refugio (Heavy)	* .90			1- 9-36
Saxet	* .90			1- 9-36
Mirando	* .85			1- 9-36
Pettus	*1.25			1- 9-36
Salt Flat	* .97			1-14-36
Darst Creek	* .97			1-14-36
Placedo (Heavy)	* .85			4- -36
Placedo (Light)	* .95			4- -36
Port Lavaca	* .97			
Plymouth	* .90			12-17-35

* All gravities—flat rate.
† Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Arkansas				
El Dorado (Light) and Rainbow	25— $.78	2¢	40—$1.10	1-10-36
El Dorado East Field and Smackover	* .75			1-10-36
North Louisiana	25— 0.78	2¢	40— 1.10	1-10-36
Urania	* .97			1-10-36
South Louisiana	Below			
Lockport	19— .92	2¢	34— 1.22	1- 9-36
Iowa Cameron Mds	19— .82	2¢	34— 1.12	1- 9-36
Rocky Mountain States				
Salt Creek	29— .94	2¢	40— 1.18	1-10-36
Elk Basin	*1.18			7-20-36
Grass Creek (Light)	*1.18			7-20-36
Grass Creek (Heavy)	* .58			1- 9-36
Big Muddy	*1.11			1- 9-36
Rock Creek	*1.12			1- 9-36
Sunburst	*1.15			6- 5-36
Lance Creek	* .90			1- 9-36
Osage	*1.08			
Cat Creek	*1.07			8-25-33
Cut Bank	*1.35			6- 3-36
Pondera	*1.05			9-29-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	* .75			9-29-33
Mid-West States				
Lima	*1.25			1-10-36
Illinois	*1.23			1- 9-36
Princeton	*1.23			1- 9-36
Western Kentucky	*1.23			1- 9-36
Pennsylvania				
Bradford	*2.45			1-13-36
Sw. Pa. Pipe Line	*2.17			1-13-36
Eureka Pipe Line	*2.12			1-13-36
Buckeye Pipe Line	*1.97			1-13-36
Corning Grade	*1.42			1-13-36
Michigan				
Central Michigan	*1.42			6-15-36
Muskegon	*.70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

* All gravities—flat rate.
‡ Average price, all oil sales being to small refineries.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid.-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Cut °4
September 6, 1935	Up 5	.....	.....
October 29, 1935	Up 15	.....	.....
November 1, 1935	.....	.....	Up °28
November 18, 1935	Up 15	.....	.....
December 6, 1935	.....	.....	Up °9
January 9, 1936	.....	Up 10	.....
January 13, 1936	Up 15	.....	.....
February 26, 1936	.....	.....	Up '5

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of gross value less royalty interest.

TEXAS—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and ⅜ of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

* All gravities—flat rate.
° Signal Hill 26 gravity.
' Seal Beach 26 gravity.

CALIFORNIA OIL PRICES

(All gravities above those quoted take highest prices of that field. Effective February 26, 1936)

Gravity	Signal Hill	Seal Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Fe Springs	New Hall McKittrick Kern River Round Mountain	Mountain View	Midway-Sunset Buena Vista Hills Elk Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$.80	$.79	$.78	$.79	$.80	$.76	.....	.....	$.80	$.76	$.76	$.77	$.78	.....	$.70	.....	$.70	$.70	$.70	.....
15-15.9	.80	.79	.78	.79	.80	.76	.....	.....	.80	.76	.76	.77	.78	.....	.70	.....	.70	.70	.70	.....
16-16.9	.80	.79	.78	.79	.80	.76	.....	.....	.80	.76	.76	.77	.78	.....	.70	.....	.70	.70	.70	.....
17-17.9	.80	.79	.78	.81	.80	.76	.....	.....	.80	.76	.76	.77	.78	.....	.70	.....	.70	.70	.70	.....
18-18.9	.80	.79	.78	.84	.80	.78	.....	.....	.82	.76	.76	.77	.78	.....	.70	.....	.70	.70	.70	.....
19-19.9	.82	.79	.82	.87	.84	.81	.....	.....	.85	.76	.78	.77	.78	.....	.70	$.70	.74	.74	.71	$.70
20-20.9	.85	.79	.85	.90	.88	.84	.....	.....	.88	.78	.82	.77	.80	.....	.....	.70	.78	.78	.72	.70
21-21.9	.88	.79	.89	.93	.93	.88	.....	.....	.91	.80	.85	.77	.84	.78	.....	.73	.82	.82	.74	.70
22-22.9	.92	.82	.92	.96	.96	.92	.....	.....	.93	.84	.89	.79	.88	.78	.....	.77	.87	.86	.75	.73
23-23.9	.95	.86	.96	.99	1.02	.96	$.84	.....	.96	.88	.93	.82	.92	.78	.....	.80	.92	.90	.82	.76
24-24.9	.99	.91	1.00	1.02	1.06	.99	.88	.....	.99	.91	.96	85	.96	.82	.....	.84	.97	.94	.86	.79
25-25.9	1.03	.95	1.03	1.05	1.11	1.03	.93	.....	1.02	.95	.....	.89	.99	.86	.....	.88	1.01	.98	.90	.83
26-26.9	1.06	1.00	1.07	1.09	1.16	1.06	.98	.....	1.05	.98	.....	.92	1.03	.90	.....	.91	1.06	1.02	.....	.....
27-27.9	1.10	1.05	1.11	1.12	.....	1.10	1.03	.....	.....	1.02	.....	.96	1.06	.95	.....	.95	1.10	1.06	.....	.....
28-28.9	1.14	1.10	1.14	1.15	.....	1.14	1.07	.....	.....	1.06	.....	99	1.10	.99	.....	.99	1.15	1.10	.....	.....
29-29.9	1.17	1.15	1.18	1.18	F.O.B.	1.17	1.12	.....	.....	1.09	.....	1.03	1.14	1.03	.....	1.02	1.20	1.14	.....	.....
30-30.9	1.21	1.19	1.22	1.21	Pipe	1.21	1.17	F.O.B.	.....		.....	1.07	1.17	1.08	.....	1.06	1.25	1.18	.....	.....
31-31.9	.....	.....	.....	1.24	Line	1.24	1.22	Ship	.....		.....	1.11	1.21	1.12	.....	1.09	1.29	.....	.....	.....
32-32.9	.....	.....	.....	1.27	.....	1.27	1.27	.....	Kettleman Hills			1.14	1.25	1.16	.....	1.13	1.34	.....	.....	.....
33-33.9	.....	.....	.....	.....	.....	.....	1.32	$1.28	1.19			1.18	1.28	1.20	.....	1.17	1.38	.....	.....	.....
34-34.9	.....	.....	.....	.....	.....	.....	1.37	1.32	.....	1.23	.....	1.22	1.32	1.25	.....	1.20	.....	.....	.....	.....
35-35.9	.....	.....	.....	.....	.....	.....	1.42	1.35	.....	1.27	.....	1.25	.....	1.29	.....	.....	.....	.....	.....	.....
36-36.9	.....	.....	.....	.....	.....	.....	1.46	1.39	.....	1.31	.....	1.29	.....	1.33	.....	.....	.....	.....	.....	.....
37-37.9	.....	.....	.....	.....	.....	.....	1.51	1.43	.....	1.35	.....	1.32	.....	1.37	.....	.....	.....	.....	.....	.....
38-38.9	.....	.....	.....	.....	.....	.....	1.56	.....	.....	1.39	.....	1.36	.....	1.42	.....	.....	.....	.....	.....	.....
39-39.9	.....	.....	.....	.....	.....	.....	1.61	.....	.....	1.43	.....	1.40	.....	.....	.....	.....	.....	.....	.....	.....
40-40.9	.....	.....	.....	.....	.....	.....	1.66	.....	.....	.....	.....	1.43	.....	.....	.....	.....	.....	.....	.....	.....

Outpost Watched

GARBER FLANK EFFORTS MAY SHOW SIMILARITY TO CITY

WEEKLY STAFF REPORT

Oklahoma City.—A great many opinions are being expressed by oil men in this area concerning the outcome of a new test, the Ohio Oil Company's Sara A. Smyth 1, NEc SW 23-22n-4w, on the west edge of the Garber pool of Garfield County, north-central Oklahoma. Many operators are of the opinion that geological conditions in this portion of the Garber area are comparable to those found in the fast-fading Oklahoma City oil field.

Possibility of heavy production in Britton field of Oklahoma County was seen when Slick-Urschel Oil Company et al's Hannum 1, NWc NE 20-13n-3w, showed for oil at a total depth of 6583 feet. A potential test was started but the well made only one 15-minute head in four hours, but ran more than 100 barrels into the tanks during the period. About 3000 feet of mud was standing in the hole which interferred with the flow, and operators are to clean out and retest. The same interest's Meeker 2, NE NW NW 29-13n-3w, plugged back to 6726 feet, and after being placed on potential flowed 308 barrels of oil in four hours with a small amount of water showing.

In the Edmond pool, Continental Oil Company's Young 10, SW SE NW 31-14n-3w, was showing for 8,000,000 cubic feet of gas, but no oil. Operators were preparing to deepen. Ohio Oil Company's Dahl 13, NW SE SE 31-14n-3w, made 1,200,000 cubic feet of gas and was to be acidized.

Sinclair Prairie Oil Company's Stubbeman 1, NE SW NW 34-10n-2w, farthest southern test in the Moore pool of Cleveland County, drilled to 7340 feet in sand and dolomite where the drill pipe stuck. Operators were circulating oil in the hole in an effort to free the pipe.

Mid-Continent Petroleum Corporation's Campbell 3, NW SE NE 33-17n-4w, in the Crescent pool of Logan County, when opened August 22, flowed 867 barrels of oil the first hour; 686 barrels the second hour, and 634 barrels the third hour. Potential on the well, taken the following day, was set at 15,684 barrels of oil, accompanied by 21,000,000 cubic feet of gas. The same interest's Campbell 4, SW SE NE 33-17n-4w, was in the Wilcox sand at 6172 feet where it had a good show of oil. Casing is being run.

Next well due for completion in the area is Carter Oil Company's Walker 3, NW NE NE 33-17n-4w, which was at a total depth of 6222 feet, rigging up Hydril.

In the Oklahoma City field, operations lagged as more wells were completed and the field as a whole settled to quiet production. Potential was finally established on Sunray Oil Company & Phillips Petroleum Company's State 10, the ninth well in the mansion area to be completed. It was given a potential of 9408 barrels of oil from a total depth of 6420 feet.

Other wells adjacent to the state capitol engaged in routine drilling. Clark & Company's Cooke 1, the "mystery" well of the field at present, was drilling somewhere below 6250 feet, but operators were withholding information regarding tops of formations.

Nearing completion in the old North City field was Travis Petroleum Company's Lucas 4, NWc SW 36-12n-3w, which was swabbing 250 barrels of oil net daily, with some water and drilling mud from a total depth of 6424 feet. Swabbing will be continued until the hole is cleaned out, following which the well will be put on gas lift production.

An interesting test has been started near the townsite of Norman. It is the Hughes Drilling Company et al's Norman 1, NWc NE 17-9n-2w, two miles north and a half mile east of the city limits. The location is on a lease acquired from the Sinclair Prairie Oil Company. The project is being supported by several major oil companies which hold spreads around the test.

MORE WILDCATTING

South Oklahoma strike incentive for drilling

Ardmore.—Opening a new producing area in southern Oklahoma last week provided further incentive for exploratory drilling in that part of the state. The new area is north of old Carter County producing areas and just across the line in Garvin County. The new producer. Winkler & McQueen, Incorporated et al's Davis 1, SEc 32-1n-3w, is six miles northeast of county line in Carter County, and about six miles east of the Stephens County line, thus placing all three counties in line for a moderately intensive drilling campaign.

Davis 1, August 21, swabbed 240 barrels of oil in three hours, and was then shut down to clean out. Production is coming from between 2637 and bottom at 2676 feet, where it started producing more than two weeks ago while the crew was cleaning out. Earlier in the week the well flowed 400 barrels of oil in 10 hours. Prior to that the well had made a flow of 50 barrels of oil in one hour. Tubing was run at 2621 feet, and a late report states that should the well refuse to flow through tubing, the flow of 672 barrels of oil last week will be accepted as the potential test.

In Beckham County, on the extreme western edge of the state, Carter Oil Company's Davidson 1, CNW SW 2-9n-25w, perforated casing between 4090 and 4106 feet, without favorable results. Ten perforations were then made in the casing at 3888 feet, and the hole filled 600 feet with salt water in one hour. Operators were to plug back to 3800 feet and make more perforations hoping to bring in a gas showing had at that depth.

Sinclair Prairie Oil Company's Stockton 1, CSE SW 26-6s-2w, in the Oswalt area of Love County, was reacidized with 15,000 gallons and when opened August 23, flowed 10 barrels of oil during the first 15 minutes through tubing, 8 barrels of oil the next 15 minutes through casing, and 7½ barrels the next 15 minutes. The well flowed 60 barrels of oil the following four hours. The swab was stuck in the hole later in the week, and operators were considering deepening the well.

The Texas Company's Cathey 1-B, SE NE NE 6-5s-1w, latest discovery well southeast of Hewitt in Carter County, was shut down with water trouble. The crew will set a liner and drill ahead to the Simpson. Oil was standing 2000 feet in the hole, coming from the Dees sand.

Carter Oil Company's Leon Voorhees 1, CSE SW 34-5s-2w, in Carter County, was drilling at 8403 feet in hard lime after having a show of gas at 8399 feet.

Phillips Petroleum Company has started the first deep test in the southwest corner of Cotton County. Henry M. Warren 1, NEC SE 1-5s-13w, is 5 miles southwest of Devol and about 8 miles north of Burkburnett, Texas, a shallow production area.

Gulf Oil Corporation's Waarmouth 1, SE NW SE 21-1s-18w, in the Frederick area of Tillman County, encountered trouble when salt water broke into the hole as it was being bailed. It is shut down awaiting orders.

In the Cement area, Caddo County, Ohio Oil Company & Ramsey Petroleum Company's Wade 10, NW NE SW 2-5s-9w, reported a good show of oil from a gas sand found while coring at 6585 feet. The test failed to find production at the contract depth of 6464 feet, and is being drilled to the Wilcox sand. In the same area, English et al's Wootten 1, SE¼ 33-6n-9w, was preparing to spud.

START NEW TESTS

East Central area getting wildcat locations

Tulsa.—Plans for numerous wildcat tests seemed to be the order of business in the east central drilling areas of Oklahoma during the past week, with several new locations being reported.

The Garvin area was given a new test when Ellison, Schweer and Hammond made location for Selby 1, C SE NW 24-2n-3w, which is building derrick. Contract depth on the test is 6500 feet. It is located in a 4000-acre block near the recent strike of the Carter Oil Company in the old Fox pool of Carter County.

A wildcat test northeast of Manitou, in northern Tillman County, was spudded August 24. It is Beal & Burton's Magill 1, SEc 18-1n-16w, in the center of a 1700-acre block. The well will be carried to 1700 feet with cable tools,

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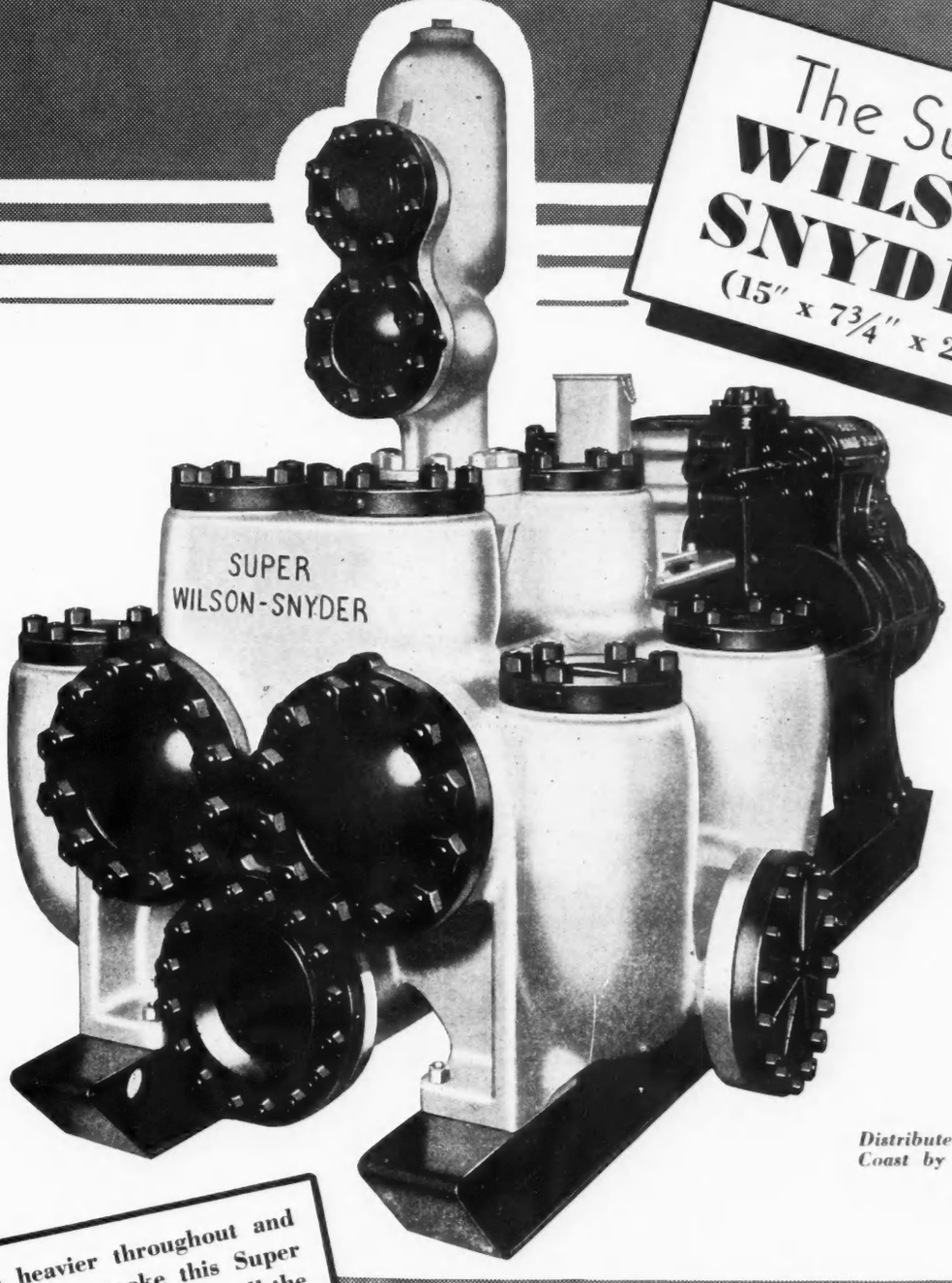

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but may be deepened to 3000 feet with rotary outfit.

A new test was staked one location north of Winkler & McQueen's Davis 1, being Davis 2, SEc 32-1n-3w, just across the line from the Tussy pool in Garvin County. In the Pauls Valley area of Garvin County, Tide Water Oil Company's Sturdevant 1, NEc NW 28-4n-1e, was digging cellar.

Incorporation Products Company staked location for Schoob 1, C NE NE 32-20n-2w, in the Lucien pool of Noble County. Further activity was also noted for the "Double-OK" pool of Okmulgee County, with L. B. Jackson moving in tools for Smith 1, NWc SW 18-13n-11e. The new test is a direct offset to Walden & Lewis' Replople 1, SWc NW 18-13n-11e, which started development in the pool.

Disappointing word from the Clarita area of Coal County was that Carter Oil Company's James 1, SW NW SW 35-1s-8e, was abandoned at 3780 feet. The test found salt water and plugged back to 3180 feet where it once again encountered water.

In the Fitts field of Pontotoc County, several good producers were had. Fleetborn Drilling Company's Morin 3-A, SE SW SE 20-2n-7e, flowed 136 barrels of oil the first hour; 134 barrels the second hour and 135 barrels of oil the third hour through tubing, the production coming from the Hunton lime.

E. H. Moore et al's Harper 7-A, NWc NE 29-2n-7e, was given a 24-hour potential of 2556 barrels of oil. The well was an upper Simpson sand producer.

The farthest northeast producing well in the Fitts field has a twin producer, one of the largest Hunton lime wells in the field. It is Blackstock et al's Moody 2-A, which topped the Hunton lime at 3452 feet and made the following hourly flows: 492 barrels the first, 351 the second, 230 the third, 192 the fourth, 206 the fifth, 202 the sixth, 209 the seventh, and 218 barrels the eighth hour.

In the Jesse pool of Pontotoc County, Continental Oil Company's House 2, NE NW SE 12-1n-7e, made 1527 barrels of oil in five hours. The well is on the south line of production and in the east side of the pool. The same company also made location for Almanda Thompson 1, SW NW SE 2-1n-7e.

Aiken Oil Company's Daniels 1, SW NE SW 21-2n-7e, topped the Bromide at 4405 feet, and after being drilled to 4447 feet, was acidized with 10,000 gallons. The well then flowed 250 barrels of oil in eight hours through tubing.

Louis Sykes et al's Mitchell 1, C NW SW 12-9s-26e, Oklahoma's most southeasterly well, 22 miles south of Idabel in McCurtain County, was dry and abandoned at 3000 feet in the Paleozoic.

JESSE SPACING RULE

Oklahoma City.—Establishment of a separate 10-acre well-spacing program for the Jesse townsite in Pontotoc County was announced August 22 by the Oklahoma Corporation Commission. The order also included 20 acres north and 20 acres south of the townsite and provided that wells on the townsite be placed as nearly as possible in the center of the block.

OKLAHOMA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO COUNTY—		
Magnolia, Madrano 5, se nw sw 36-6n-10w	300	3432
CARTER COUNTY—		
Barnett, Inc., Lynn 5, ne nw ne 31-1s-2w	11	1500
Shell, McClure 11, nw nw ne 5-4s-3w (otd 1045) (pb 1092)	150	1095
McClure 43, ne ne nw 5-4s-3w	100	1108
COAL COUNTY—		
Shell, Hill 3, se se nw 30-3n-10e (pb 4270)	*	6457
COMANCHE COUNTY—		
Anderson et al, Price 2, nw ne ne 30-2n-9w (pb 1880)	20	2137
CREEK COUNTY—		
Shamblin et al, Abraham 1, ne sw se 21-15n-8e	10	2472
Shaw & Doak & Hughes, White 1, se se sw 24-17n-7e (pb 2870)	*	3077
L. B. Jackson, Coyle 1, nw sw nw 1-17n-8e (pb 1222)	6	1570
Mauch, Culbertson 1, ne ne ne 19-17n-8e (pb 1835)	20	2962
El Dorado O&G, Myers 2, ne sw ne 1-17n-10e	¶2½	570
Saco Oil, Leader 4, nw se sw 15-18n-8e	25	2728
Grieves et al, Meyers 1, nw nw nw 18-19n-8e	*	2797
GRADY COUNTY—		
Carter Oil, Kearns 1, sw ne se 21-3n-5w	¶2½	1701
HUGHES COUNTY—		
Phillips Pet., Eberle 1, ne ne sw 12-5n-9e	*	5744
Phillips Pet., Tancred 1, ne ne nw 3-9n-13e	*	4193
JACKSON COUNTY—		
Gulf Oil, Badger 1, sw sw nw 5-1s-19w	640	2619
Ellis 2, nw se ne 6-1s-19w	2356	2603
Shirley 4, sw ne ne 6-1s-19w	1032	2625
JEFFERSON COUNTY—		
Circle Oil, Seay 37, ne sw se 3-7s-5w	19	1105
KIOWA COUNTY—		
Westbrook & Likeing, Aetna Life 1, ne se se 9-5n-16w	*	495
Jones et al, Kelsay 1, nw nw ne 7-6n-16w	*	648
LOGAN COUNTY—		
Blackwell et al, Davis 1, se se se 18-18n-4w	*	6526
Mulberry Oil, Quigley 1, sw sw sw 21-18n-4w (pb 4210)	*	6165
MARSHALL COUNTY—		
Oller & Rogers, Johnson 1, nw se nw 14-5s-5e	*	830
OKFUSKEE COUNTY—		
Arkansas Royalty, Creek Trading 1, nw ne ne 19-10n-9e	54	1817
Manahan Oil, Scholtz 1, sw se nw 31-10n-9e	260	1774
Mid-Continent, Scott 1, sw nw se 24-12n-8e	¶10	4021
OKLAHOMA COUNTY—		
British-American, Clark 2, nw sw nw 23-12n-3w	¶4-7463	6495
Clark 3, sw nw sw nw 23-12n-3w	¶7-6144	6494
Apollo Oil Corp., Ball 1, ne nw sw nw 26-12n-3w	216	6502
Big Chief Drlg., Webster 1, se sw se 27-12n-3w	2244	6512
Sunray Oil, State 9, nw nw ne 27-12n-3w	¶11½-13,718	6445
Marathon, Hathaway 2, se ne nw 6-13n-3w	¶11-7259	6682
OKMULGEE COUNTY—		
Alrose Supply, Thompson & Marshall 5, nw nw ne se 4-15n-11e	*	2500
Turner et al, Chamberlain 3, se sw se 35-15n-12e	*	1587
OSAGE COUNTY—		
Elfred Beck, 2, ne ne se 21-24n-8e (pb 1984)	15	2359
Carter et al, Bear 12, ne nw nw 15-25n-6e	743	2875
Gray & Tolson 1, sw sw ne 33-25n-7e	*	3066
Carter, Mosier 3, se ne nw 34-26n-6e	34	2901
Sam Goodman, 4, nw se nw 12-26n-11e	3	864
Osage Gas Prod., 400, nw se se sw 29-28n-11e	¶1/6	821
PONTOTOC COUNTY—		
Blackstock, Louis 2-A, se se se 19-2n-7e	1848	3910
Stahl, Dennis 6, ne sw sw 21-2n-7e	¶1-1924	4375
Magnolia, Metropolitan Life 17, sw sw se 22-2n-7e	¶3½-2747	4340
Metropolitan Life 13, sw ne ne 27-2n-7e	¶3-5160	3692
Metropolitan 19, sw nw ne 27-2n-7e	¶3½-5424	3700
Samidan Oil, Holkum 1-A, sw sw ne 27-2n-7e	¶3¼-4032	3343
Moore, Mack 9, ne se se 28-2n-7e (pb 4379)	145	4430
Skelly, Park College 14, ne ne nw 28-2n-7e	¶3¼-5136	3720
Stahl, Dennis 2-B, nw ne nw 28-2n-7e	¶3-4992	3704
Moore, Schauers 16-A, ne ne nw 29-2n-7e	¶1¼-2007	4300
Crosbie, Hardin 1-B, sw sw ne 30-2n-7e	5244	3631
McCullum & Forber, Layne 2, nw ne nw 30-5n-5e	64	2515
Mary F Oil, Miller 1-A, sw ne se 16-5n-8e	¶6¼	403
POTTAWATOMIE COUNTY—		
Tom Phillips, Tomlinson 1, ce½ ne nw 26-11n-6e (pb 2636)	¶5	3435
SEMINOLE COUNTY—		
Deaner & Tilley et al, Wilson 1, se sw sw 29-7n-6e	*	4723
Vierson, Long 4, nw nw se 32-8n-8e (pb 4139)	125	4203
J. D. Campbell, Knappenberger 3, nw ne ne 17-9n-7e	135	3448
Sinclair Prairie, Warrier 3, sw sw sw 17-9n-7e	¶1-502	3469
Deep Rock, Hagler 1, ne se ne 19-9n-7e (pb 3900)	180	4125
Exchange Drlg., Mills 3, ne ne se 19-9n-7e	*	2278
Carter et al, Anthony 1, cw½ sw ne 11-10n-6e	754	4159
STEPHENS COUNTY—		
George Pace, Payne (Fee) 10, nw ne nw 28-2s-7w	135	1693
Westheimer & Daube, Haws 3, sw se se 4-2s-5w (pb 540)	*	1280
TULSA COUNTY—		
Johnson Oil Ref., Holms Burton 2, se nw ne 31-19n-10e	*	2742

*Failures; †Junked; ¶Million cu. ft. gas.

NEW POOL LOOMS

Several Kansas fields extended during week

WEEKLY STAFF REPORT

Wichita.—Drilling operations in Kansas ran true to form during the past week as the possibility of another new oil producing area was seen and numerous fields extended their producing limits. Northeastern Pawnee County, heretofore regarded by oil men as barren territory, took on added importance as Simpson Oil Company"s Gates 1, SWc 13-20s-16w, 11 miles northeast of Larned, recovered a saturated core from between 3825 and 3841 feet in the Siliceous lime. Gates 1 picked up the lime at 3815 feet and was drilled to 3841 feet, where the 4½ foot core showed porosity and saturation, indicating that the test may be completed as a commercial producer

In Rice County, Raymond pool was given a half-mile extension as Atlantic Oil Porducing Company's Scott 1, in Section 20-20s-10w, filled 2000 feet with oil from the Siliceous lime in one and one-half hours after the plug was drilled at 3297 feet. The hole was deepened and filled approximately 3000 feet with oil in four hours.

Graber pool of Southeastern McPherson County was extended a quarter of a mile south as Continental Oil

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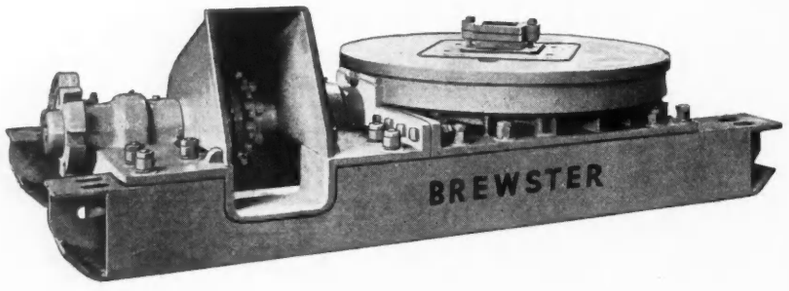

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Company's C. C. Graber 1, SEc NW 32-21s-1w, had 600 feet of oil standing in the hole, bottomed at 3333 feet in Hunton lime. The lime was topped at 3303 feet, and the first oil showing was at 3322 feet. Nearest production to the new extension well is Graber 3, recently completed for 1360 barrels of oil daily after acidizing.

Derby Oil & Refining Company's Michaelis 1, NE SE NW 31-15s-13w, extended the producing area of the Trapp pool of Russell County by finding production in the Topeka lime at 2889 feet. After drilling seven feet into the lime, operators swabbed 218 barrels of oil in five hours. It will be acidized before completion.

Sinclair Prairie Oil Company's Willard 1, NEc SW 6-19s-9w, Haferman pool, Rice County, was an extension well, swabbing about 2 barrels of oil in 1 hour after the first head had been swabbed off. The well had a half bail-

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
The Texas Co., Moran 3, se ne sw 25-17s-11w	2022	3290
Republic O&G, Bloomer 1, ne se nw 36-17s-11w	903	3285
Mid-Continent, Matzek 8, sw nw se 25-19s-11w	1489	3300
ELLIS COUNTY—		
National Ref, Bemis 1, se se sw 16-11s-17w	*	3433
Gulf Oil, Swires 2, ne se sw 8-15s-18w	1160	3560
Palmer et al, Ruder 2, nw nw ne 17-15s-18w (otd 3585)	666	3759
Ruder 3, sw nw ne 17-15s-18w (otd 3291)	472	3554
ELLSWORTH COUNTY—		
Gulf Oil, Massman 1, nw nw sw 18-17s-10w	*	3362
GREENWOOD COUNTY—		
Moss Pet, Pixlee 6-C, se ne se 7-22s-10e	35	2345
McPHERSON COUNTY—		
Diskey & Talbot, Johnson 1, cne se 17-20s-1w	*	3422
Slick, Pryor & Lockhart, Stucky 5, ne sw sw 27-20s-3w	119	3507
RICE COUNTY—		
Shell et al, Tobias 1, cs½ s½ ne 6-19s-9w	1318	3238
Magnolia, Sharp 1, nw sw nw 8-20s-9w	*	3308
Derby, Hauschold 1, sw sw sw 11-21s-7w	5848	3380
L. E. Douglas, Hauschild 2, cn½ n½ nw 15-21s-7w	15,149	3366
Shell, Gordon 1, cwl ne 21-21s-10w	*	3445
ROOKS COUNTY—		
Helmerich & Payne et al, Bedard 1, cne 29-9s-19w	*	3688
Superior Oil et al, Johnson 1, nw nw ne 35-10s-19w	526	3519
RUSSELL COUNTY—		
Winkler-Koch, McAllister 1, ne ne se 9-12s-13w	lcn.	abd.
Equity Gas, Gross 2, nw sw ne 31-13s-12w	lcn.	abd.
Hartman & Blair, Boxberger 1, nw nw sw 32-13s-14w (otd 3220)	864	3311
Empire, Crawford 6, sw se sw 2-14s-15w	905	3308
W. I. Southern, Inc., C. Sellens 1, nw ne nw 29-15s-13w	686	3321
Coralena Oil, Trapp 4, se ne se 30-15s-13w	1704	3253
Bridgeport Mach, Michaelis "A" 2, se ne se 33-15s-13w	lcn.	abd.
SUMNER COUNTY—		
Slick, Pryor & Lockhart, Murphy 2, se ne se 32-31s-1w	992	3680
Olson & Shell, Community 3-A, sw se sw 11-32s-2e	667	3050
Wilson et al, Clark 1, csl nw 15-35s-1w	*	4545
WOODSON COUNTY—		
McClintock & Smith, Vostrez 1, se sw ne 23-23s-14e	150	1628
Sheedy et al, Klick 18, sw se se 20-25s-14e	180	1474

*Failures; †Junked; ¶Million cu. ft. gas.

er of water during an 18-hour swabbing test. It will be plugged back to 3254 feet and acidized. Shell Petroleum Corporation's Tobias 1, SE SW NE 6-19s-9w, north offset to the discovery producer in Haferman pool, pumped 1318 barrels of oil in a potential test from the Siliceous lime at 3283 feet after being acidized. The discovery well was completed for 1719 barrels of oil.

Two producers were completed in the Hauschild pool of Rice County last week. Douglas Oil & Gas Company's Hauschild 2, CN½ N½ NW 15-21s-7w, was given a potential rating of 15,149 barrels of oil during a 24-hour test. Depth is 3266 feet. In the same pool, Darby Petroleum Corporation's Hauschild 1, SWc 11-21s-7w, came in to produce 1543 barrels of oil in 6 hours, and was given a 24-hour potential rating of 5048 barrels of oil. Production was from 3380 feet.

Oil at Otis Gas Field

The largest well in the Otis gas field of Rush County, Morgan & Flynn's Koriel 1, NWc SW 23-18s-6w, flowed 1599 barrels of oil in 17 hours from 3539 feet. This well is apparently responsible for the new rush of activity taking place in the eastern part of the county. Future drilling activities in the area will be for oil rather than gas.

Apparently defining production limits for the Boxberger pool of Russell County, Hartman & Blair's Steinert 1, NEc 36-15s-15w, was abandoned as a dry hole at 3434 feet, where water was encountered in the Siliceous lime. The same interest's Johnson 1, NWc 11-13s-14w, north of Russell, was drilling ahead below 3070 feet in the Oswald lime after picking up a small show of oil between 2902 and 2912 feet.

Empire Oil & Refining Company's Cunningham 1, SEc 26-18s-1w, McPherson County, originally completed for 830 barrels of oil earlier in the summer, pumped 849 barrels of oil in 24 hours on a retest from 2832 feet in the chat. Cunningham 1, the discovery well in the North Canton pool, is northeast of production in the Ritz-Canton pool.

Ryan Consolidated Petroleum Corporation's Bemis 1-B, NW SW NW 22-11s-17w, Bemis pool, Ellis County, produced 1804 barrels of oil on the first potential test. Production is coming from 3380 feet in the Siliceous lime. The hole filled 3100 feet with oil when the first pay was entered at 3370 feet. The same interest's Bemis 2-A, SW NW NW 22-11s-17w, had derrick started and was moving in tools.

Derby Oil & Refining Company's Beltz 2, SWc 4-26s-4w, Hilger pool, Reno County, filled 3700 feet with oil in 6½ hours after topping the Viola lime at 4100½ feet and drilling to 4105 feet. Tubing and rods were run to test. Beltz 1 was completed for 1604 barrels of oil.

Activity was increased in the southwestern Kansas gas area as operators estimated a gas flow of 5,000,000 cubic feet for Helmerich & Payne et al's Jones 1, SEc 34-26s-4w, some 18 miles southwest of Garden City in Finney County.

The Texas Company's Bloomer 2, SW NW NE 36-17s-11w, in the Bloomer pool of Barton County, pumped 2028 barrels of oil natural in 20 hours from 5625 feet, siliceous lime.

Market Clouded

MONUMENT PRODUCTION EXCEEDS DEMAND

WEEKLY STAFF REPORT

Hobbs, N. M.—Completion of 24 oil producers in Lea County the past week, with another large quota in the offing, threatens to further complicate the oil market in this county. Allowable production of Monument field, third largest producing area in the state, exceeds market demand, and The Texas Pipe Line Company has restricted its runs since August 1 to 80 percent of the quota allocated each well by the state oil conservation commission. The field was assigned a quota of 15,140 barrels daily from 165 wells during the August 16-31 period, and the above carrier is the only outlet available, except that Gulf Refining Company, pipe line division, transports and markets 2156 barrels allowable held by Gulf Oil Corporation.

Monument field recorded 13 completions the past week, and during the same period 8 were added to the Eunice field. An unusually large number of new wells are now putting in their appearance as a sequel to the termination of the rig builders' strike early in July which tied new work for nearly a month.

Allowable Cut Likely

A substantial cut in the allowable of prorated wells is likely to be announced by the commission for September to enable new wells to share in the limited market. The state oil control board authorized a top allowable of 78,000 barrels for New Mexico during August, while the United States Bureau of Mines recommended a top allowable of 70,100 barrels daily. The latter nominated a 1500-barrel increase for September to compensate for scheduled completions.

The partially explored 4½ mile interval between Monument and Eunice fields recorded three large producers the past week. Shell Petroleum Corporation's State 1-G, SW SW SW 16-20s-37e, north offset to Repollo Oil Company's Roach 1, which virtually tied in the two major fields last May, flowed 130 barrels of pipe line oil per hour natural through open tubing from lime at 3880 feet. The third producer for the area showed a greater potential when Skelly Oil Company's State 1-F, SE SE SE 17-20s-37e, gauged 640 barrels oil in 4 hours, flowing natural through tubing at 3880 feet, or 345 feet below sea level. The volume of gas accompanying the oil was estimated at 2,500,000 feet daily. Performance of these two new wells will tend to stir up more activity between the two fields. Humble Oil & Refining Company's State-Aggies 3, C NW NW 31-20s-37e, located ¾ mile northwest of nearest production in Eunice field, responded to treatment with 2000 gallons of acid in lime at 3738-3845 feet, with an elevation of 3547 feet, flowing 62 barrels hourly.

Continental Oil Company and The California Company's J. L. Reed 3-A-3, C NE SE 3-20s-36e, situated on the southwest edge of production at Monument, gauged 32 barrels of 32.9 gravity oil per hour natural through ¾-inch tubing choke from lime at 3876-3930 feet, with an elevation of 3616 feet. Gas volume tested 1,200,000 feet daily. Amerada Petroleum Corporation's C. H. Weir 6, C NE NW 35-19s-36e, proved to be an unusually large producer for the northwest flank of the structure in responding to treatment with 2000 gallons of acid with a steady flow of 502 barrels of oil in 4 hours

NEW MEXICO Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice Field)—		
Atlantic O. P. Co., State-Catron 2-L, c se nw 22-21s-36e	1200	3900
Conoco & California Co., Lockhart 2-B-14, c nw nw 14-21s-36e	750	3895
Meyer 11-B-4, c se se 4-21s-36e	3000	3890
Meyer 13-B-4, C lot 10, 4-21s-36e	3600	3871
Empire O&R Co., State 4-D, c se ne 32-21s-36e	96	3941
Gulf Oil Corp., State-Arnott-Ramsey 9-C, c ne ne 21-21s-36e	2000	3916
Humble, State-Aggiles 3, c nw nw 31-20s-37e	1500	3845
Shell Pet. Corp., State 2, C lot 10, 6-21s-36e	1100	3880
LEA COUNTY (South Eunice Field)—		
N. G. Penrose-Rowan & Nichols Oil Co., W. Cary-Humble 4, c sw nw 22-22s-36e	116	3600
Skelly Oil Co., Ellen Sims 1, c nw se 3-23s-37e	750	3594
LEA COUNTY (Monument Field)—		
Amerada Pet. Corp., State 1-U, c sw nw 32-19s-37e	1200	3910
State 2-V, c nw ne 36-19s-36e	2500	3930
Chas. H. Weir 6, c ne nw 35-19s-36e	3000	3975
Conoco-California Co., J. L. Reed 3-A-3, c ne se 3-20s-36e	1500	3930
Gulf, State-Graham 5-C, c nw ne 25-19s-36e	1500	4000
Ohio Oil Co., Oscar Barber 1, c sw sw 32-19s-37e	3600	3899
Oscar Barber 2, c ne nw 5-20s-37e	2500	3894
Oil Well Drlg Co., P. C. Klingsmith 1, c se se 20-19s-37e	12,000	3984
Repollo Oil Co., W. P. Byrd 1, ne ne nw 11-20s-36e	3000	3905
Shell, State 3-B, c ne nw 36-19s-36e	3500	3947
State 1-G, sw sw sw 16-20s-37e	3500	3841
Skelly Oil Co., State 1-F, se se se 17-20s-37e	4000	3880
The Texas Co., J. W. Cooper 1, c nw ne 5-20s-37e	2500	3890
LEA COUNTY (Wildcat)—		
Culbertson & Irwin, J. S. Eaves 1, c sw nw 18-21s-33e	*	3813

*Failures; †Junked; ¶Million cu. ft. gas.

through open tubing, with a gas volume rated at 3,300,000 feet daily. The hole was drilled to 3975 feet, or 323 feet sub sea. The latter's State 2-V, C NW NE 36-19s-36e, flowed 362 barrels oil in 4¼ hours through tubing after using 2000 gallons of acid at 3930 feet, and State 1-U, C SW NW 32-19s-37e, flowed 86 barrels oil in 1 2/3 hours through tubing after using 2000 gallons acid at 3910 feet. The Texas Company's J. W. Cooper 1, C NW NE 5-20s-37e, gauged 100 barrels per hour after treating lime at 3760-3890 feet with 2000 gallons of acid. The Texas Company's Willing Weir 1, C SW NW 25-19s-36e, near the northwest edge of the field and in an area that has generally yielded small wells, tested 21 barrels of fluid in 24 hours, including 6 percent bs&w, after a nitro shot and acid at 3990 feet, or 330 feet sub sea.

Ohio Oil Company's Oscar Barber 1, C SW SW 32-19s-37e, flowed 76 barrels per hour on 1-inch tubing choke after treatment of lime at 3899 feet with 3000 gallons of acid, and its Barber 2, C NE NW 5-20s-37e, produced 52 barrels per hour under choke from lime at 3894 feet after using the same amount of acid solution. The rig has been skidded to drill Barber 3, C SE SW 32-19s-37e, and Amerada Petroleum Corporation's Lambert 3, C NE NE 6-20s-37e, is rigging up. Ohio Oil Company has started operations on McGrail 1, C SE SW 26-19s-36e.

Empire Oil & Refining Company provided the fourth new location for Monument field the past week in starting work on D. L. Laughlin 1, C NW SE 5-20s-37e, situated one-half mile from production.

Late completions in Eunice field includes Continental Oil Campany and The California Company's Meyer 13-B-4, C Lot 10, 4-21s-36e, which gauged 75 barrels of 34.3 gravity oil per hour natural through ¾-inch tubing choke from lime at 3798-3871 feet, with gas volume rated at 1,500,000 feet daily.

Four new locations were assigned this field. Gulf Oil Corporation has started work on State-Arnott-Ramsey 10-C, C SW NE 21-21s-36e, and 11-C, C NE SE 21-21s-36e. Shell Petroleum Corporation made location for State 1-G, C Lot 11, 6-21s-36e, and Humble Oil & Refining Company is at work on J. D. Knox 5, C SE SE 10-21s-36e.

Eunice Extension

Repollo Oil Company's J. M. Brownlee 1, NE NE SW 25-21s-36e, located 3 miles east of nearest production in the Eunice field and 2 miles west of North Eunice sandy-lime production, affords an extension, else a new pool in flowing 2½ barrels of pipe line oil per hour from sandy-lime at 3860 feet, or 303 feet sub sea. This wildcat was drilled on a short term 160-acre lease. It is slightly more than ½ mile south by west of an old gas well drilled by Gulf Oil Corporation.

Oil Well Drilling Company and The Texas Company's L. L. Clardy 1, C SE SE 13-16s-36e, wildcat project in the Lovington area, tested dry on drill stem test at 4800 feet, and was drilling in hard lime at 4890 feet. Contract calls for a 5000-foot test. Magnolia Petroleum Company's John Scharbauer 1, C NW NE 29-16s-35e, was drilling in anhydrite at 3685 feet, according to late reports.

Drilling Program

WEST TEXAS WILL CONTINUE ACTIVE FOR LONG PERIOD

WEEKLY STAFF REPORT

Midland.—West Texas is maintaining the large volume of drilling activity that made its appearance during the forepart of the summer, and is now averaging from 5 to 6 completions daily, with new locations slightly greater in number. Proved acreage awaiting development is ample to support the large drilling program indefinitely. Funds are available to the independents and majors to carry on the program, and at present the demand for this sulphur crude is favorable, with all important oil producing areas served by direct pipe line outlets.

Routine drilling centers upon Winkler, Ward, Ector and Upton Counties. Wildcat activity is about equally divided throughout the district, with the north portion of the Permian Basin commanding the most interest because of the possibilities of important strikes in the deep lime. The sandy-lime belt across Ward and Winkler Counties have been the largest contributors of new production over a long period, but have not reached the half way mark on the drilling of proved locations.

Ector County offers two comparatively new areas that are destined to receive considerable new field work during the remainder of the year, while the North Cowden and Judkins fields still afford a number of attractive locations that remain to be drilled. In the northwest portion of this county, the Goldsmith field is just beginning to hit its stride on developments now that prolific production has been uncovered to the northwest of the large lease blocks held by Gulf Oil Corporation and Phillips Petroleum Company. Grisham & Hunter Corporation's two wildcats on the Cowden ranch in the extreme northwest portion of the county have logged oil and gas showings at intervals in the big lime, but only a small amount of free oil and both are now bordering on the doubtful stage for production. R. B. Cowden 1, C NW SW Section 10, Block 45, T-2-N, was drilling at 4525 feet, or 1223 feet sub-sea, and Cowden 2, located 1⅜ miles to the west, was drilling at 4693 feet, or 1385 feet below sea level.

In the Foster field, Ector County, there are five operations underway, including two offsets to Broderick & Calvert, Inc.'s recent 424-barrel completion. Barnsdall Oil Company offset this producer to the east, and York & Harper, Inc., Midland, are at work on a north offset, having contracted with Harry Brown, Ardmore, Oklahoma, to drill three wells to be paid out of production. Broderick & Calvert, Inc., are starting work on J. L. Johnson 1, SWc Section 12, and Schermerhorn Oil Corporation is moving in material to drill a west offset. Stanolind Oil & Gas Company is attempting a 1½-mile northwest extension in the drilling of E. F. Cowden 2-B, C NE NE Section 10, Block 43, T-2-S. York & Harper, Inc., have cemented 7-inch pipe at 3878 feet preparatory to the installation of cable tools to drill in Witcher 1, southeast diagonal offset to the discovery well. Humble Pipe Line Company is enlarging its facilities to handle oil in the area. An abundance of fresh water is available for rotary rigs at shallow depths, and fuel gas is obtained from a system built from the South Cowden field.

Gulf Oil Corporation and Truett B. Cranfill's J. B. Tubb 2, C NE NE Section 12, Block B-27, Sand Hills field, Crane County, increased its natural flow to 42 barrels per hour when deepened to 4350 feet, and it will be carried to about 4400 feet. It is the largest natural producer in the field. Humble Oil & Refining Company's Tubb 3, offsetting production, was drilling below 4130 feet, and Loffland Brothers et al's Tubb-Gulf 2, northeast outpost, was drilling below 3920 feet. Gulf Oil Corporation's Waddell et al 2, Ordovician lime test, was reaming hole at 5660 feet. John I. Moore et al's Barnsley 1, also a deep test on a wildcat block to the southeast of production, had progressed to 5550 feet. M. B. McKnight, owner of fee rights under a large ranch to the northeast of the Sand Hills field, is reported to have contracted with Sawyer Drilling Company to drill a test to the salt series in Section 11, Block B-27, PSL Survey, then the latter has option rights on a large block of leases that will be donated for the drilling of a lime test, which must be started by the close of the current year.

Brewster County

In northern Brewster County, Floyd C. Dodson et al's Texas American Syndicate 1-A, C NE NE Section 66, Block 10, GH&SA Ry. Survey, has landed 8-inch pipe with packer at 2887 feet to make a production test at 2912 feet after logging oil and gas showings at several horizons in the Deleware zone, topped at 2297 feet, with an elevation of 4228 feet. This wildcat is contracted to drill to 6000 feet.

Dodson and associates have been assigned checkerboarded lease on about 3700 acres out of a block held by Amerada Petroleum Corporation to drill to 5000-foot wildcat in northwestern Andrews County. Location may be assigned to the SW¼ Section 5, Block A-32, PSL Survey. The lease requires production by November 20. In southern Gaines County, Landreth Production Corporation's Kirk 1, wildcat producer, pumped 42 barrels

oil during 17 hours, and at rate of one barrel per hour the next seven hours without showing water. The hole was plugged back from sulphur water at 4870 feet, or 1599 feet sub-sea, to 4855 feet, and will be acidized, or shot with nitro. Humble Oil & Refining Company's Wales Eubank 1, located 8 miles to the northwest, was drilling in lime at 5900 feet, with an elevation of 3365 feet, with no oil or gas showings below 5632 feet. Amerada Petroleum Corporation et al's Averitt 1-A, C NE NE Section 228, Block G, W. T. Ry. Survey, Seminole structure, Gaines County, has started rigging up to comply with drilling contract assumed in taking over W. T. Walsh and Harry Adams et al's junked gasser. Five major companies took part in this purchase in order to take over and abandon the gasser for fear of a blowout, and if Averitt 1-A makes an oil producer it will revert to Harry Adams after the original purchase price of the junked gasser and the new test is paid out by production. Majors holding leases on the Seminole structure are anticipating the opening of an oil field when the lower section of the big lime is penetrated.

Altantic Oil Producing Company's Leck-Walton 3-C, SWc S½ SW¼ Section 3, Block 26, PSL Survey, inside location of the Henderson field, Winkler County, and twin to a junked gasser, showed for a high initial in gauging 133 barrels per hour natural through 2½-inch tubing from dolomite lime at 3025-3050 feet, with the hole bottomed at 3072 feet. The company has two more tests, each offsetting big producers, about due for completion, with casing cemented below the big gas production. Wahlenmaier Petroleum Corporation's Fred Leck 1-D, two locations north of the above producer, failed to exclude gas in cementing 5½-inch pipe at 2948 feet, and tested 20,000,000 feet of gas when unloaded at 3074 feet. Sinclair Prairie Oil Company's Fred Leck 1, SEc Section 33, showed gas at 2835-40 feet, and was drilling at 2890 feet. R. H. Henderson, Midland, et al's Daugherty 1, NE SW NE Section 33, is preparing to start up. Champlin & Bass, Inc., Dallas, has started work on each of its two 80-acre leases in Section 4, offsetting big producers.

Runnels County is in line for a new wildcat test to be drilled by the Superior Oil & Gas Company, Tulsa, and W. J. Millard in the SWc of the Cook Heirs 820-acre tract, M. P. King Survey No. 436.

TEXAS PANHANDLE
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Empire O&R Co., Deahl Bros. 4	¶15.6	3148
Magnolia Pet. Co. 4-D	815	3113
Gulf Oil Corp., E. Cooper 14	674	3059
GRAY COUNTY—		
Bell O&G Co., Furneaux Bros. 2	¶5.3	3316
S. J. Iverson et al, McKinney-Barrett 2	727	3278
Skelly Oil Co., H. Schafer 76	1041	3265
Stanolind, T. B. Cobb 10-B	685	3335
HUTCHINSON COUNTY—		
Owl Oil Corp., J. W. Moore 3	550	3100
Stanolind, R. C. Ware 10-B	597	3165
MOORE COUNTY—		
Shamrock O&G Co., McKee 1-B	¶153	3524
M. Olson 1	¶127.7	3469
WHEELER COUNTY—		
DuMar O&G Co., L. B. Sims 1	¶10.6	1696

*Failures; †Junked; ¶Million cu. ft. gas.

LARGE OIL FLOW
Gray County producer gets better with age

Pampa, Texas.—Rated as the largest producer recorded by the Texas Panhandle in recent months, Warner Oil Company's A. Chapman 2, SE SW NE Section 69, Block 25, H&GN Ry. Survey, Gray County, boosted its natural flow to 170 barrels of oil on the third-hour gauge from granite wash at 2640-45 feet. The well started off flowing 60 barrels per hour, and increased to 160 barrels the second hour, with a further increase the following hour. It is a north offset to a pumper, and in an area that has been erratic on production performance.

Continental Oil Company has withdrawn as an operating unit in Wheeler County, through sale of its W. E. Bentley, W. C. Compary and J. H. Jackson leases, aggregating 320 acres, and 4 oil wells making an aggregate of 20 barrels oil daily, to Simon Anissen, head of S. & M. Oil Company, Borger, for $18,000 cash.

L. S. Hobbs, president of Hobbs Oil Company, Amarillo, has started operations on J. P. Pearson & Hitch 1, SE NW NE Section 290, Block 2, GH&H Ry. Survey, Hansford County. This wildcat is due to be drilled to sea level depth, or about 3600 feet, and centers upon a 7000-acre block of leases.

Austin.—The Texas Railroad Commission has issued new rules for operations in the Voss field in Bee County, following closely the requirements for wells in the Tuleta field. These rules include 10-acre spacing and two strings of casing.

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
L. T. Burns et al, J. J. Perkins 3-C, sec 10	10	1625
Cable Oil Co., Webb 12, blk 5	2	713
Consolidated Oil Co., Portwood 3-DD, sec 2412	40	1438
Deaton & Gose, H. Hawkins 2, sec 22	*	534
B. H. Hilburn et al, L. F. Wilson 1, blk 34	*	1607
Maxson & Panhandle Ref. Co., Green 42-B	20	1124
Regal Oil Co. et al, L. F. Wilson 2-B	25	896
COOKE COUNTY—		
J. L. Anderson et al, T. C. DeLisle 1	523	2068
Anderson-Kerr Pet. Co., L. K. Bell 4	650	1933
R. S. Rose 1	526	1950
C. C. Harwell & Co., H. G. Proffer 1	*	2165
F. W. Merrick, Inc., G. A. Stelzer 9	2	825
Mullins & Weil, R. S. Rose 1	520	1942
Tom Patton, Inc., E. P. Bell 1	519	1939
Rapp, Sledge & Gleason, S. M. King 1	550	2073
J. C. Shaffer, Inc., L. M. Curry 1	431	2082
Ed Wilson 2	*	2385
Ungerman et al, Walter Reed 1	*	2130
JACK COUNTY—		
Iron Mountain Oil Co., Birdwell 3	308	3013
C. A. Montgomery et al, J. T. Raney 1	*	832
Mullendore, Berry & Berry, W. J. Chambers 1	456	2965
MONTAGUE COUNTY—		
Gulf Oil Corp., W. W. Jones 3-B	15	849
The Texas Co., Henley 4	13	1200
WICHITA COUNTY—		
E. H. Croon et al, C. P. Van Loh 1, sec 4	*	560
Floyd Pace et al, Foster 10, sec 1	6	474
Rathke Oil Co., Murray 13	*	887
WILBARGER COUNTY—		
Fain-McGaha Oil Corp., Waggoner Est. 1-NN, sec 37	†	1295
Regal Oil Co., J. W. McCrary 1-A, sec 64	*	865
YOUNG COUNTY—		
L. T. Burns et al, W. A. Rushing 3, sec 3401	35	907
W. F. Collins et al, H. Koester 1	3	1065
B. C. Gilmore et al, A. Williams 2	*	606
L. G. Hawkins et al, J. M. Kirkland 12, sec 2249	10	705
O. Hudgeons et al, E. F. Farrow 1-A, sec 1369	*	1000
Pet. Producers Co., C. E. Luton 6	20	670
Rathke Oil Co., J. T. Rogers 2	20	4888
Sams & Myers, C. J. Taack 1, sec 2245	*	745

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CRANE COUNTY (McCamey Field)—		
R. H. Henderson, Fred T. Hogan & Choate, Hughes 1-B	900	2086
ECTOR COUNTY (Foster Field)—		
Broderick & Calvert, Inc., H. C. Foster 1	424	4237
ECTOR COUNTY (Goldsmith Field)—		
Gulf Oil Corp., C. A. Goldsmith 7	1014	4230
ECTOR COUNTY (North Cowden Field)—		
Stanolind, J. M. Cowden 32	573	4209
Mrs. T. B. Roberts 3	1495	4312
HOWARD COUNTY—		
Conoco & Group 1 Oil Corp., Settles 22	*	2651
Settles 10-S	275	1248
Shasta Oil Co., G. M. Dodge 7	496	2777
JONES COUNTY—		
Dobbs Oil Co.-W. K. Wood, W. J. McCreight 1	*	2602
Owens-Snebold Oil Corp.-Wittmer O&G Prop., Inc., L. J. Jones 1	*	2603
PECOS COUNTY—		
(Pecos Valley Field)—		
M. H. Black et al, Pecos Valley Oil Co. 3	219	1606
D. G. Gray et al, Iowa Realty Co. 1	140	1640
PECOS COUNTY (Torborg Field)—		
Cardinal Oil Co., Tippett-Kirby 40-E	*	562
REEVES COUNTY—		
R. W. Clark-Washington Oil Co., Radford 1	*	811
TAYLOR COUNTY—		
A. R. Forster et al, O. A. Prescher 1	*	2432
UPTON COUNTY (McCamey Field)—		
Homestead O&G Co.-W. M. Holland, M. C. Powell 2	*	2427
J. E. Lucas et al, Cordova Union 1, sec 2	182	2182
TP Coal & Oil Co., Ellen Shirk 7	799	2150
Williams & Williams Drl. Co., J. W. Robbins 2	187	2106
WARD COUNTY—		
The California Co., A. B. Gordon 33	546	2530
Elliott & Hardesty, J. L. Costley 2	10	2576
FHE Oil Co., J. W. Maxwell 2-B	1200	2390
Gulf Oil Corp., O'Brien 73	279	2766
Pat Hill et al, E. H. Clements-Sun 4	200	2351
Lindsey Drl. Co.-D. H. Bolin, E. W. Thomas 1	*	2820
Mid-Continent Pet. Corp., R. O. Potts 3	276	2395
Rio Bravo Oil Co., D. Olcott 10	1271	2500
Sinclair Prairie, J. C. Messer 4	518	2353
WINKLER COUNTY (Gulf-O'Brien Field)—		
Gulf Oil Corp., O'Brien 71	607	3185
WINKLER COUNTY (Halley Field)—		
Emperor Oil Co., S. M. Halley 3	726	2905
Emperor & S. J. Iverson Tool Co., McCall-Cowden 1	200	2842
WINKLER COUNTY (Henderson Field)—		
Atlantic O. P. Co., Walton-Leck 2-C, sec 3	10,000	3072
WINKLER COUNTY (Sayre Field)—		
Empire O&R Co., Daugherty 4	788	3025
Humble, J. F. Howe 12	1167	3000
Humble & Tide Water, Walton 3-D	605	2983
Illinois Oil Co., McCutcheon-Conoco 1-B	¶6½	3383
Sinclair Prairie, Walton 5-B	1135	2959
R. A. Westbrook Oil Corp., Ida Hendick 2	664	3080
WINKLER COUNTY (Wildcat)—		
Dad Joiner Oil Corp., R. M. Evans 1	*	5055

*Failures; †Junked; ¶Million cu. ft. gas.

Deep Encouragement

SULPHUR BLUFF TEST FLOWS; SHOWING AT CAYUGA

WEEKLY STAFF REPORT

Tyler.—Completion of a flowing producer by the second test drilled to the upper Trinity series on the Sulphur Bluff faulted structure in Hopkins County, and prospects of oil with gas being developed by the second deep test for the Cayuga field, Anderson County, lends encouragement to deep exploration work in the East Texas basin area.

D. S. Hager, W. P. Luse and Russ Petroleum Company's J. E. Worsham 2, located about 1000 feet southwest of the discovery well at Sulphur Bluff, gauged 545 barrels of pipe line oil flowing through 2½-inch open tubing in 24 hours from Paluxy sand pay at 4521-4577 feet, with an elevation of 429 feet. Top of Paluxy series was logged at 4487 feet, or about 58 feet lower structurally than the discovery well, which was completed as a 530-barrel pumper last July at 4500 feet. More drilling is in store for the area, and prospects are good for an independent group to install a gathering line and extension to reach tank car loading facilities. Numbers of locations approved by the commission for independents for the general area have not progressed beyond the paper stage. The discoverers are likely to make another location shortly.

Brighter outlook for oil production from the lower Glen Rose limestone section of the Trinity at Cayuga loomed when Tide Water Oil Company and Seaboard Oil Corporation's J. N. Edens 15, located about 7000 feet southwest of their completed gasser and distillate well in the same zone, developed 3,000,000 feet of gas with colored distillate when formation tester was used at 7350-7414 feet. Coring was underway below 7420 feet, recovering oolitic lime and shale. Owners may penetrate several hundred feet into the lower Glen Rose before halting operations to run casing for a production test. Edens 15, located 3700 feet from east and 1917 feet from the north lines of 988.6-acre lease, Samuel Snider Survey, logged top of Georgetown lime at 4619 feet, and first Glen Rose between 6040 and 6050 feet. Top of anhydrite was called at 6995 feet, and first lower Glen Rose at 7350 feet, or 7037 feet sub-sea. Edens 15 is 140 feet lower on structure, according to correlation of the pay zone with that of N. N. Wills 21-A, which was completed as a big gasser with water white distillate from perforated casing at 7210-7360 feet after plugging back from Travis Peak at 9085 feet to 7416 feet. Successful completion of an oil producer from the Trinity will set in motion a number of deep tests for the Cayuga field. Edens 15 was located down dip on the structure to try and avoid the gas cap area encountered by Wills 21-A.

Gulf Oil Corporation's Mary J. Ross 1, Camp Hill area, Anderson County, is due to reach the lower Glen Rose limestone series near the 8300-foot level, and according to late reports was drilling in anhydrite at 8070 feet. Top of this zone was logged at 7941 feet, or 7454 feet subsea.

In Kaufman County, E. G. Colton, R. P. Lester et al's Barrow 1, J. D. Taylor Survey, has been held up by stuck and parted drill pipe after drilling to 5968 feet, or within 32 feet of the contract depth. First stringer of anhydrite was called at 5742 feet, and massive anhydrite at 5820 feet, with an elevation of 528 feet. Drill pipe became stuck near the 3600-foot level, and parted.

Contract for the drilling of a 6000-foot Trinity test on the Bazette faulted structure, Navarro County, will be awarded shortly by the Calto Oil Company, headed by E. B. Germany, Dallas. The company has a large block of leases in the area, and has been successful in disposal of proposal or protection spreads to majors. Location is scheduled to be in the NEc of the Etta Black 266-acre tract, B. G. Balthrop Survey, about 2 miles southwest of Bazette.

EXPECT DROP

Tyler, Texas.—Sharp reduction in the volume of completions for the East Texas field will occur within a few weeks as result of the rig builders' strike having materially curbed new field work. During the past week there were 51 completions, including two dry holes, as compared to 54 completions the previous week. The effect of the labor dispute will become more apparent next week and on each report thereafter, with possibilities that drilling operations will never be restored to the level prevailing prior to the walkout by union rig builders.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Arkansas F. O. Co., J. W. Wheelis 15 (80½-ac)	7000	3691
Currin Oil Co., Frederick 2 (11.41-ac)	75	3626
Frederick 4 (11.41-ac)	100	3646
Humble, W. L. Price 53 (432.05-ac)	6800	3785
J. H. Wooley 30 (201.53-ac)	3600	3677
Hunt Prod. Co. & C. M. Joiner, Bradford 15-B (98.15-ac)	250	3684
M. H. & Jim McMurrey, D. Dickerson 3 (56-ac)	40	3600
D. Dickerson 4 (56-ac)	40	3630
Ohio Oil Co., Clay Hrs. 20 (113.56-ac)	750	3709
H. L. Griffin 13 (65.61-ac)	480	3691
Royal Pet. Corp., I. W. Wooley 8-A (40-ac)	55	3557
Stanolind, H. C. Maxwell 25-A (111.65-ac)	6000	3778
Sun Oil Co., A. Barksdale 6 (34¾-ac)	8000	3797
Texas Canadian Oil Corp., A. Kersh 2 (101.76-ac)	20	3673
Theron Oil Corp., Deason 2 (5-ac)	480	3683
KILGORE AREA—		
Arcadia Ref. Co., J. T. Samples 6 (101.6-ac)	750	3741
Atlantic O. P. Co., Clayton 7 (40-ac)	7200	3566
Albert Baggett et al, W. P. Crews 1 (29.4-ac)	100	3712
Steve H. Christenson et al, W. Britton 1 (4-ac)	*	3690
Humble, W. D. Peterson 16 (97¾-ac)	2500	3662
Thos. D. Humphrey, C. C. Crews 4 (160-ac)	500	3628
Magnolia, N. Utzman 4 (87½-ac)	120	3470
Phillips Bros., Roy Walker 2 (10-ac)	360	3602
Sinclair Prairie, S. G. Andrews 31-A (200-ac)	8000	3490
S. G. Andrews 32 (200-ac)	8500	3480
A. A. King 3-C (127½-ac)	3000	3423
Stanolind-Tide Water, A. W. Miller 5 (100¼-ac)	3600	3592
Stewart Oil Co., M. Holt 2 (103.73-ac)	75	3565
M. Holt 3 (103.73-ac)	65	3564
LONGVIEW AREA—		
Amerada Pet. Corp., Hearne 12 (108-ac)	7600	3482
Atlantic O. P. Co., J. M. Moore 61 (447¼-ac)	10,500	3535
J. M. Moore 65 (447¼-ac)	11,000	3532
Satterwhite 9-A (69-ac)	8600	3709
Satterwhite 6-B (48.7-ac)	8800	3700
Satterwhite 7-B (48.7-ac)	9000	3700
O. R. Cooper (H. V. Davis, Rec.), M. E. Florence 4 (41½-ac)	250	3775
Humble, A. L. Hughes 15 (91.8-ac)	9000	3647
D. Johnson 15-A (88.13-ac)	3000	3605
C. H. Lyons & N. F. Neely, J. Hargraves 3 (15-ac)	250	3776
W. W. McDonald-R. B. Campbell, G. H. Tubbs 1 (6-ac)	500	3631
Shell, S. C. Fishburn 14 (100-ac)	7400	3528
Sinclair Prairie, W. H. York 13 86.45-ac)	7000	3591
Stanolind, W. E. Bolton 2 (53.73-ac)	*	3600
Stanolind-Conoco-Tide Water, Flewellen 22-C (400-ac)	4600	3688
Stanolind-Falcon Co., C. Everette 1-B (62.1-ac)	3000	3699
Stanolind-Tide Water, J. C. Persons 23 (151.18-ac)	8200	3543
Sun-Seaboard Oil Corp., J. W. Akin 25 (163.4-ac)	10,000	3584
The Texas Co., T. B. Stinchcomb 6 (87.29-ac)	500	3758
Tide Water, Lake Devernia 36 (270.85-ac)	9000	3531
Tide Water-Russ Pet. Co., Flewellen 26 (210.9-ac)	4000	3727
J. A. Woods et al, J. H. Sobey 2 (20-ac)	2500	3696
ANDERSON COUNTY (Cayuga Field)—		
Roeser-Pendleton, Inc., Ware-Wilson 10 (460-ac)	600	4089
FRANKLIN COUNTY (Talco Field)—		
Humble, A. P. King-Hughes 4 (1053.36-ac)	500	4328
A. P. King-Hughes 8 (1053.36-ac)	960	4323
HOPKINS COUNTY (Sulphur Bluff Pool)—		
D. S. Hager, W. P. Luse & Russ Pet. Co., Worsham 2	550	4577
TITUS COUNTY (Talco Field)—		
Mrs. Pearl F. Goodwin et al, Tom Sims 1 (2½-ac)	100	4343
Eugene Constantin & Co., Cato 1 c blk 44	200	4335
Jack Hearrell et al, L. J. Truett 1, blk 40	250	4345
Humble, A. P. King-Hughes 9 (1053.36-ac)	1500	4327
Magnolia, C. W. Belcher 1 (80-ac)	1800	4325
Yandell Rogers et al, T. L. Leake 1, c lot 1, blk 39	480	4335
UPSHUR COUNTY—		
Barnett Pet. Corp., G. T. Askew 1	*	5014

*Failures; †Junked; ¶Million cu. ft. gas.

Drilling Increases

NEW CORPUS FIELDS TO CAUSE MORE WORK

WEEKLY STAFF REPORT

Corpus Christi.—Commencement of development campaigns in several new fields in this sector of South Texas assures a continuance of the active amount of work under way the past year. Flour Bluff, Clara Driscoll, McCampbell and Heyser likely will see a number of wells drilled within the next several months.

Santa Clara Oil Company's Clara Driscoll Sevier 3, south offset to the discovery well of the Clara Driscoll field, Nueces County, was cleaning through ⅛-inch choke and showing pressures of 500 pounds on tubing and 600 pounds on casing, the sand being at 3810-16 feet. About 2000 feet southwest of the most southwesterly production in this field, H. M. Reed was completing R. M. Roper 1, Section 108, which is showing for a producer. It has gas sand at 3871-78 feet, oil sand at 3888-3908 feet, and salt water sand at 3908-09 feet, the total depth. Casing was set on bottom to be perforated. W. L. Hinds is preparing to move in for Sevier 1, Section 60, Pauls Subdivision, 9000 feet northwest of the Santa Clara production.

In the general vicinity of the Flour Bluff discovery well, four active operations are getting under way with several more expected to be commenced within the next few days.

Atlantic Oil Producing Company's Maryland 1 is preparing to complete in sand section at 6533-55 feet, where it is showing for an oil producer. The well is 1150 feet southwest of the McCampbell field discovery well, but is across the Aransas County line into San Patricio County.

The best producer in the 5300-foot sand in the Bentonville-King district of Jim Wells County was recorded last week by Stanolind Oil & Gas Company when Hayden et al 1 gauged 8 barrels of oil per hour through 5/32-inch choke under 450 pounds working pressure. The well is in sand at 5343-60 feet, casing set atop the sand. Same company made a drill stem test at 5344-48 feet in W. E. Pope 1, the result being 720 feet of oil and 75 pounds pressure in 10 minutes, indicating another excellent producer. This field has had several oil producers completed in the 5300-foot sand, but the majority of the wells have been finished as wet gassers in a 4000-foot horizon.

One mile north of the Heyser field, Calhoun County, discovery well, Al Buchanan and Blanco Oil Company will make another attempt to test the 5500-foot horizon. After drilling to 5700 feet, the well has been plugged back to 5300 feet to be sidetracked. Humble Oil & Refining Company and Plymouth Oil Company jointly are drilling two wells in this field.

Continental Oil Company's Austin 1 is still having trouble, and after drilling to 8825 feet, setting 6⅝-inch casing at 8012 feet, it is cutting out the pipe at 8028 feet. The well is the fourth on a heaving shale prospect at Seadrift in Calhoun County.

Steinberger Petroleum Corporation succeeded in recovering about 6000 feet of drill stem in S. G. Druschell 1 in the Edna field, Jackson County, and is fishing the remainder. It is at 7155 feet.

Southern Minerals Corporation's T.

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TWENTY-FIVE YEARS EXPERIENCE

1903 MAGNOLIA BUILDING DALLAS, TEXAS

H. Isensee 1, in the Frio sand area of the Saxet field, Nueces County, made a drill stem test at 6283-96 feet which developed 290 pounds pressure and several feet of distillate in five minutes. It showed salt water in a sand at 6382-90 feet and has plugged back to sidetrack and record the 5800-foot horizon. This is the second well in this area to be carried to 6300 feet, but showing for gassers at that level.

Barnsdall Oil Company is preparing to commence a well which will be watched with considerable interest. It is Weil Borthers 1, located in Lot 5, McBride Partition, between the Saxet and Saxet Heights fields.

DEEPENING DISCOVERY

Colorado field well being drilled deeper

Laredo.—J. H. Meek Jr. is preparing to core Martinez Estate 1-A slightly deeper in an effort to increase production and pressure. The well several weeks ago opened the Colorado field, southwestern Jim Hogg County, when it swabbed at the rate of 100 barrels of 47.4 gravity oil per day from 3009-17 feet in the Cockfield. Pressures have built up to 65 pounds on tubing and 185 pounds on casing, but are insufficient to make the well flow.

It is a 25-foot offset to another test drilled several years ago, which showed the same sand section, but which was never tested. This abandoned well has approximately 40 feet of section without showing water, so it is likely that this well can be materially deepened before encountering danger.

As a result of this strike, Jim Hogg County looms as an important area for play. Several more locations have been staked and deals are pending which will bring about several more operations.

Zapata County's shallow Comitas field is the scene of a new drilling campaign for the Mirando district. With the producing limits being materially expanded by 900-foot producers, more companies are being brought into the play. It looks like another development similar to Escobas to the north.

Duval County offered no important wildcat developments. Several wells were being closely watched as tests were being made. Pan American Production Corporation's Welder 1-H, one mile southwest of Loma Vista field, bridged at about 1000 feet and efforts were being made to remove the bridge. It was testing at 2863 feet. Shell Petroleum Corporation washed out plug in Welder 1-B, 1¼ miles northwest of the same field, and will test at 2861-67 feet. This company's J. M. Taylor 1, 3 miles southwest of Seven Sisters field and 1 mile northeast of Loma Novia field is coring below 2535 feet.

Several tests are expected to be drilled shortly in the Rancho Solo field, discovered last year by the California Company's Gruy Estate 1. The well made a gasser in the Government Wells sand. Later, Rio Bravo Drilling Company and George Coates drilled W. R. Peters 1-A, SE Section 397, ½-mile to the northwest, testing salt water in the Pettus sand at 2892-98 feet. It plugged back and completed as a gasser in the Cole sand at 1807-18 feet. Recently, W. R. Peters 2-A, SW Section 29 and an east offset to the first shallow producer, was completed at 1820-45 feet as a 15,000,000 cubic foot gasser under 300 pounds pressure. The well developed considerable oil in the spray, indicating that a producing area is near at hand.

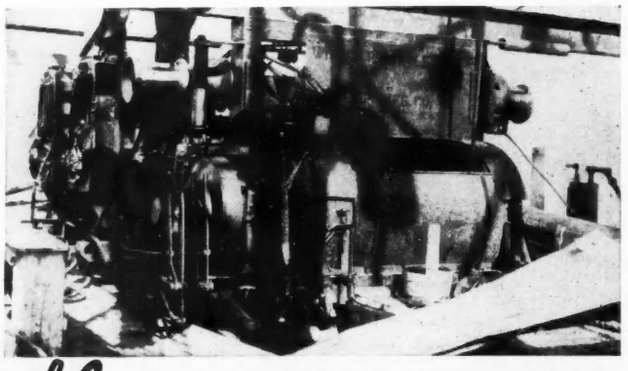
THIRD VOSS WELL

Beeville.—Third oil producer for the newly discovered Voss field of Bee County was completed late last week to pave the way for immediate development of this area. The newest test is Weigand Brothers' M. M. Bergel 1, west offset to the discovery well. It is in sand at 4004-6 feet, but not yet gauged.

The field appears to be similar to the others in the immediate group, but actual development has been delayed until additional information was obtained through the drilling of several wells.

An important Bee County wildcat was abandoned, being Illinois Petroleum Corporation's M. M. McKinney 1 in the L. C. Randolph Survey, two miles southeast of Pettus. It showed salt water in the Pettus sand at 4102-6 feet and was carried ahead to 4262 feet.

A Bee County test which will be closely watched is D. R. Semmes' T. M. Plummer 1, F. J. Chessman Survey, east offset to the discovery well of the Plummer field. The discovery well made gas, but several wells drilled on the flank of the structure developed



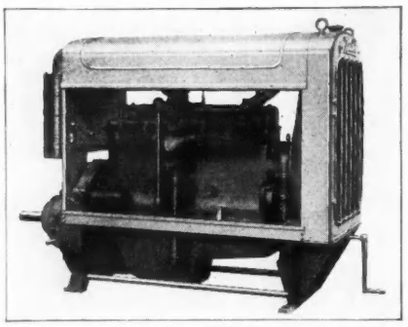
Portable GAS ENGINE RIG

Drills Shallow Wells with Low Fuel Cost

For drilling shallow tests in the Cushing, Okla., gas field, drilling contractor John Nunnelee is using a portable rig powered by two 6-cyl., 5 x 5½, gas burning DHKU Waukesha Engines. Engines operate independently . . . one for driving mud pump; other for drilling. Both may be connected to furnish power to draw works and still operate pump.

One job, bottomed at 3,090 ft., took 22 days . . . and total fuel cost was $150.84 . . . for prime movers, rig floor stoves and a small engine driving lighting generator . . . less than $7 a day, or about 5 cents per foot of hole.

The engines used by Mr. Nunnelee . . . Waukesha High-Duty Sixes . . . are built to meet the demand for a modern portable power unit in the 80-125 hp. range that will stand up under severe continuous duty in the oil fields. Their design embodies such advanced features as removable wet sleeve cylinders, built-in governor, seven main bearings, filtered pressure oiling, down draft carburetion, improved manifolding, overhead valves. ***Waukesha Motor Company, Waukesha, Wisconsin.***



WRITE today for Bulletin 1019

WAUKESHA ENGINES

salt water. This well will attempt to establish oil production for this field.

Zeni Oil Company continues to have trouble in completing M. Lutenbacher 3, in the LaBahia prospect in Goliad County. The well lost the cutting tool when attempts were being made to remove the screen which became clogged. It is now fishing. The hole is bottomed at 5599 feet in sidetracked hole.

Luling Oil & Gas Company's Wheeler Holmes 1 is rigging up. It is two miles south of Green in the Carlos Martinez survey and in an area where several wells showed considerable gas in the Pettus sand.

Live Oak County is receiving a revival of wildcatting. Several new tests were commenced during the week to test to the Yegua sands.

VALLEY TESTS

Mission.—Shell Petroleum Corporation has set approximately 7600 feet of 9⅝-inch pipe in Yturria Land & Cattle Company 1, on the La Sal Viejo prospect in Willacy County. The well has shown several possible producing sands on an electric logging test.

It had several sands showing oil and gas, one being between 4800 and 4900 feet, where the well has been giving a little trouble. It has been cored to near 7900 feet and will continue to core ahead if proposed production tests do not prove commercial.

Another important Rio Grande Valley deep prospect is an 8000-foot test being drilled by Pantana Petroleum Corporation on the Harding land about 850 feet west of Quintana Petroleum Corporation's abandoned 9000-foot test. The well set 12½-inch casing at 1410 feet and is drilling ahead. It is in Hidalgo County.

BALCONES AREA QUIET

San Antonio.—Atascosa Trust's U. A. Doumch 1, Section 122, three miles north of Poteet in Atascosa County, was given an acid treatment after plugging back to 3500 feet from 4010 feet to test showings in basal Taylor marl. The well showed oil stains at this level when originally drilled, but would not give up enough oil when tested. It subsequently was carried ahead to the Edwards lime.

Several miles southwest of this well, Helvetia Oil Company's Pratt 1 continued to test in plugged-back hole at 3025 feet, but with only a small amount of oil showing.

The deep area in the northeastern portion of the South Texas Balcones Fault district shortly will attain the spotlight of attention. Paul C. Teas' Vinklarek 1, on the Bastrop-Fayette County line, is drilling below 2500 feet on a 7000-foot contract. Red Bank Oil Company's Nellie Graam 1, in the Chreisman area in Burleson County, is below 3175 feet on a 6300-foot Edwards lime test. Both are on very interesting structures.

Nothing of special interest is reported in the Caldwell-Guadalupe County Austin chalk district with the exception of several more locations within proven territory.

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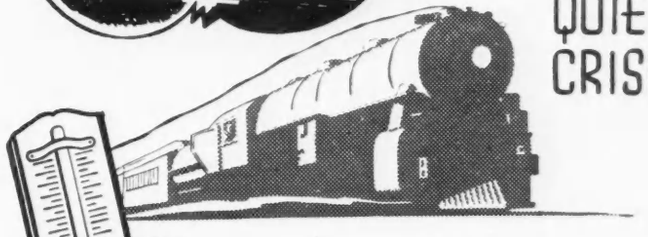

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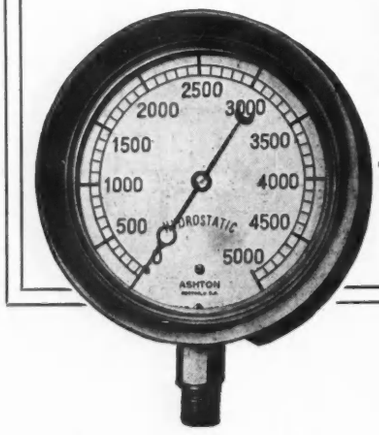
HOUSTON, TEXAS

SOUTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
Illinois Pet. Corp., M. M. McKinney 1, 330 ft nel, 1650 ft sel of 350-ac lse, L. C. Randolph sur	*	4262
BEXAR COUNTY—		
Nus-Wald O&G Co., S. Wetz Estate 12, S. Jett sur 53 (Von Ormy)	6	620
Roger Putnam, S. Wetz Estate 1, J. S. Simpson sur (Von Ormy)	4	661
Dr. L. Skaggs, P. A. Chapman, Jr. 1, 600 ft w el, 450 ft sl of 125-ac tr, A. J. Leslie sur 99	*	1020
CALDWELL COUNTY—		
L. M. Kniffin, J. M. Young 1, J. R. Miller sur (Branyon) pb td 1985	60	2353
Texas Dev. Co., Rosanky 1, 700 ft sel, 480 ft swl of M. H. Reed 964.14-ac tr, J. S. Montgomery sur	*	500
DUVAL COUNTY—		
Atlantic, J. F. Welder heirs 15D, sec 113 (Seven Sisters)	150	2489
J. F. Welder heirs 16D, sec 113, (Seven Sisters)	400	2220
Bridwell Oil Co., M. C. Hubberd 11-A, sec 71 (Loma Novia)	250	2760
Cox & Hamon, J. B. Peal 2, sec 796 (Lopez)	288	2167
J. B. Peal 3, sec 796 (Lopez)	360	2181
Duval Oil Corp., D. Ruiz 6, sec 119 (Hoffman)	200	2869
Humble, M. C. Hubberd 13-A, sec 84 (Loma Novia)	405	2830
T. D. Smith 23, sec 382 (Seven Sisters)	930	2447
J. F. Welder heirs 10C, sec 554 (Loma Novia)	346	2768
J. F. Welder heirs 11C, sec 554 (Loma Novia)	315	2731
L. & P. T. Wright 7, sec 118 (Seven Sisters)	1417	2508
Magnolia, Brennan-Benavides 38, blk 469, Hale subd, Arispe gr (Cole)	140	2864
DCRC 1, sec 97 (Piedre Lumbre)	200	1962
J. B. Peal 6, sec 383 (Lopez)	347	2128
Parr et al, W. H. Sling 3, sec 118 (Seven Sisters)	695	2489
Reliance O&R Co., C. O. Drummond 10, sec 308 (Seven Sisters)	865	2474
Rio Bravo Drlg. Co., W. R. Peters 2-A, 330 ft sl and wl of sec 29 (Rancho Solo)	¶15-20	1845
Shell, V. Mendoza 14, sec 68, (Loma Novia)	350	2747
V. Mendoza 15, se 68 (Loma Novia)	250	2735
Fred Shield, A. Hazelwood 7, sec 110 (Seven Sisters)	175	2499
Westheimer & Daube, Z. Campos 17, sec 224 (Seven Sisters)	245	2220
BROOKS COUNTY—		
California Co., Mrs. B. Garcia 1, 465 ft nl and wl of B. Garcia tr 3, La Mestina de Gonzlina gr (Alta Mesa) perf 3025-28½	75	8022
GOLIAD COUNTY—		
Diamond Half Oil Co., E. G. Gillette 2C, J. Gomez sur (N. Pettus)	40	3692
KARNES COUNTY—		
Worth Oil Co., E. Hysaw 1, 330 ft nel and sel of 1069.8-ac tr, Don Erasmus Seguin gt, John Lockhart sur 5	*	lcn.
JIM HOGG COUNTY—		
J. J. Cosner, E. Vela heirs 1, 330 ft sl and el blk 5, Clark and Cowden subd of sur 571-572, sh 1, El Peyote gr	*	lcn.
McMULLEN COUNTY—		
Loma Oil Co., L. Jacob Corp. 5-F, John Fadden sur (Jacob)	240	951
L. Jacob Corp. 6-W, Jacob sur 10, (Jacob)	30	902
MEDINA COUNTY—		
Frank A. Brown, Mary R. Winn 1, 200 ft nl, 300 ft wl 265-ac tr, Campbell sur	*	1100
MILAM COUNTY—		
Paul D. Crawford, Inc., Conolley Estate 1, 300 ft wl, 150 s of se cor Perryman tr, but in Conolley tr, J. F. Guthrie sur	*	2100
JIM WELLS COUNTY—		
Stanolind, Hayden et al 1, sec 19, King Ranch subd (Bentonville)	650	5360
NUECES COUNTY—		
W. W. Chapman, Tr., Percy Reed 1, blk 4, Country Club Place (Saxet Heights)	165	4083
Conroe Drilling Co., Frank E. Bliss 3, J. W. Stevens sur (Saxet)	720	5830
Conroe Oil Co., Rand Morgan 1-D, sec 405 (Saxet)	1200	4090
Gilcrease Oil Co., Hattie Sullivan 2, Gallagher sur (Saxet)	1000	4431
Houston Oil Co., Fee 1-A, Viola Townsite sur (Saxet)	765	5824
Pedernal Oil Co., C. R. Priour 2, blk 2, Oak Park add (Saxet Heights)	268	4085
D. W. Power Prod. Co., E. L. Coleman 1, blk 29, Country Club Place (Saxet Heights) perf 4075-79	800	4085
Southern Minerals Corp., Frank Bliss 8, Stevens sur 406 (Saxet)	515	5826
Frank Bliss 9, Stevens sur 406, (Saxet)	550	5835
Frank Bliss 12, Stevens sur 406 (Saxet)	576	5828
Mrs. M. B. Maston 3, G. Frank sur 416 (Saxet)	530	5835
Taylor Ref. Co., Hatch 1, blk "C" McBride Partition, Villareal gr (Saxet Heights)	*	4127
Taylor Pet. Co., Robinson 1, blk "C", McBride Partition, Villareal gr (Saxet Heights)	750	4096
W. A. R. Oil Corp., John Dunn 2, Villareal gr (Saxet Heights)	655	4116
Wynne Dr. Co. & J. H. Coker No. 1C, Rand Morgan sur 315 and 592 (Saxet)	800	4445
REFUGIO COUNTY—		
D. & D. Oil Co., Fannie Heard 1, lot 14, Town tr (Refugio)	950	4941
United Prod. Co., W. J. Fox 19, Hews & Brown sur (Fox)	600	5882
SAN PATRICIO COUNTY—		
Hiawatha Oil Co., E. H. Welder 4, 990 ft s of nl, 350 ft w of el of sec 19, Welder Ranch subd	*	6141
Humble, J. W. Mayo 5, J. H. Ottman sur (Taft)	225	3980
Plymouth Oil Co., E. H. Welder 57C, sec 71, Welder Ranch subd (Plymouth)	830	5644
Kirby Sharp et al, D. M. McGloin 1, 330 ft sl and wl of sec 33, Pauls Subd, Coleman-Fulton Pasture Lands	*	6014
STARR COUNTY—		
Porter Evans, H. F. Ferry 1, center blk 3, Evans subd, Ferry Lands, porc 86, J. of Camargo	*	3206
A. A. Kelley, Higinio Gonzales 1, 450 ft nl and wl 100-ac lse, sh 65, porc 71, Juris of Mier	*	lcn.
VICTORIA COUNTY—		
Eastern Texas, Hosek 3, SA&MG sur (Placedo)	280	4776
Portilla Dr. Co., P. H. Welder 1, 1018 ft sw of RR and 4125 ft sel of Felipe Dimmitt sur (opens Hughes field)	¶20	4279
WILLIAMSON COUNTY—		
Taylor Ref. Co., Henry Sladek 10A, White sur (Byersville)	*	848
WEBB COUNTY—		
Mills Bennett, J. L. Valadez 6, sec 73 (Lopez)	625	2150
J. L. Valadez 9, sec 73 (Lopez)	625	2148
Porter & Blanchard, S. Benavides 1, blk 365, Hale subd, Arispe gr (Cole)	165	2936
ZAPATA COUNTY—		
Texas Co., Whitehead 92, Cerrito Blanco gr (Escobas)	*	1870

*Failures; †Junked; ¶Million cu. ft. gas.

ASHTON
Hydraulic
GAUGE



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HOUSTON, TEXAS

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANAHUAC—		
Humble, Johnson 4	576	7100
Shaver 1	600	7122
White 12	120	7128
BIG CREEK—		
Gulf, Davis 70	*	4245
BOLING—		
Mackhank Oil Co., Farmer-Gulf Fee 2	440	4248
DICKINSON—		
Keno Oil Co., Broughton 1	70	8037
Humble, Magle 4	696	8000
Maco Stewart A-9	744	8708
GOOSE CREEK—		
Gulf Oil Corp., Churchill 13-A	35	1271
HUMBLE—		
E. M. Wallace, House 8	*	3987
MANVEL—		
The Texas Co., Richard 2	*	4350
MARKHAM—		
Hamil & Hamil, Hudson 5	400	3655
NOME—		
Sun, Paggi 2	408	6060
PIERCE JUNCTION—		
Harrison & Abercrombie, Ritter 2	290	3497
SOUTH HOUSTON—		
Stanolind, Lamb 1	310	4775
Williams 1	233	4820
THOMPSON—		
H. N. Naylor, Gehr 9	600	5390
TOMBALL—		
Humble, Gossett 5	480	5547
Martens 1	450	5557
Tomball Townsite 1, Unit 6	*	5591
Shell, Beeler 1	515	5570
MATAGORDA COUNTY—		
Sterling, Baer 1, sw of Sargent, S. Hoit sur	*	6930
WHARTON COUNTY—		
Pure, Borden et al 1, Blue Basin prospect, W. H. Leckie sur	*	7993

*Failures; †Junked; ¶Million cu. ft. gas.

Record Tottering

TEXAS GULF COAST WILDCAT MAY DRILL TO 10,000 FEET

WEEKLY STAFF REPORT

Houston.—The first 10,000-foot test in the Texas sector of the Gulf Coast may be Harrison & Abercrombie's Armstrong Plantation 1 in the Old Ocean area of Brazoria County. August 28 this north extension test was coring shale and sands with slight odors of oil at 9979 feet. It is already the deepest test ever drilled on the Texas Gulf Coast.

Last week the operators cored a sand and shale from 9922 to 9942 feet and had a slight showing of oil. From 9942 to 9954 feet there was salt water sand with an odor of oil. At 9954 to 9958 feet was shale. At 9979 feet the operators were still in a shale.

Considerable interest was shown in Sun Oil Company's H. Lauter 1 on the southeast flank of Clay Creek field, Nester Clay Survey, when the test cored oil sands from 7446 to 7456 feet and ran 7-inch casing. Reports were that the string of casing was a protection string. At 3200 feet the operators encountered a fishing job which gave them considerable trouble. After drilling to 10,000 feet the crew can plug back and test the sands showing oil at 7446 feet. Sun Oil Company's Lauter 1 is in search of a new deep producing horizon and is reported to be contracted to 10,000 feet.

Nome Extended

The second producer was completed in Nome field, Jefferson County, last week when Sun Oil Company completed Paggi 2, J. W. Kirby Survey, flowing at the rate of 17 barrels of 26 gravity oil through a ¼-inch choke, with a tubing pressure of 400 pounds and a casing pressure of 450 pounds. The hole was drilled to 6060 feet, plugged back, and 7-inch casing was cemented at 6005 feet. The gas sand was encountered at 5978 feet and the oil sand at 6007 feet.

Paggi 2 extends the producing area approximately 1000 feet south and establishes Sun Oil Company as the second major oil company in Nome field, which was discovered by Shell Petroleum Corporation's Carpenter 1.

The southwestern portion of the Dickinson (Gillock) field, Galveston County, was extended 1200 feet northeast last week when Humble Oil & Refining Company completed Maco Stewart A-9, W. K. Wilson Survey, from a new producing sand, flowing at the rate of 31 barrels of 38.4 gravity oil per hour through ¼-inch choke with tubing and casing pressures of 1500 pounds. The gas/oil ratio was 762 to 1. Maco Stewart 1 is producing from Frio sands from 8700 to 8706 feet. Seven-inch casing was cemented at 8700 feet and 2½-inch tubing was hung at 8589 feet.

After completing Maco Stewart A-9, Humble Oil & Refining Company made location for Maco Stewart A-10. It is 1866 feet northwest of Maco Stewart A-9 and 466 feet northeast of the railroad in the W. K. Wilson Survey. It is near the Graben which separates Dickinson field from the so-called Gillock field. Later development will show if the area is all one field.

Humble Oil & Refining Company also completed Magle 4, 800 feet southwest of Magle 2, S. Jones Survey, when the well came in flowing pipe line oil at the rate of 29 barrels per hour through ¼-inch choke with a tubing pressure of 1300 pounds and a

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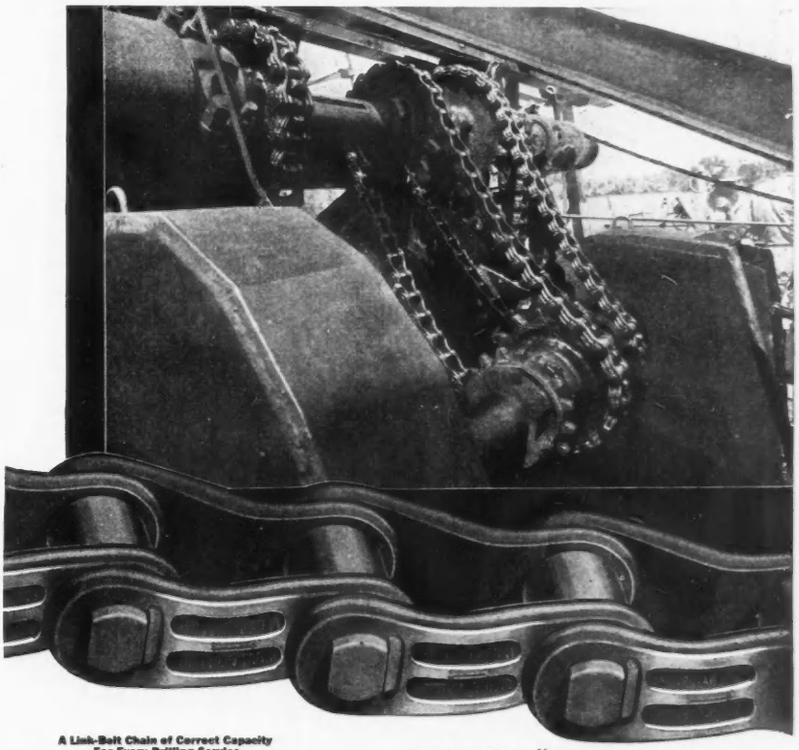

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SS-124, 2-Bar Hyper (API-4)	130,000
SS-40 Hyper (API-3)	75,000
SS-40+ Red-Hed (API-3)	48,000
SS-124+ Red-Hed (API-4)	112,000
SS-40 (API-3)	28,000
SS-124 (API-4)	60,000

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casing pressure of 1400 pounds. Oil sand was encountered at 7960 feet and 7-inch casing cemented at 7959 feet. Bottom of the hole is at 8000 feet.

Ken Ben Oil Company's Maco Stewart 2, W. K. Wilson Survey, was flowing oil at the end of the week. The operators perforated casing from 8665 to 8675 feet and washed the well with oil and rocked it with gas. The well was flowing clean oil at the end of the week, but no gauge was available.

A new wildcat location was made in the J. F. De Rumayor Survey of Liberty County last week by J. C. Mayo on the K. Moore land. It was reported in Houston that Humble Oil & Refining Company had made a location in this area, but this could not be confirmed. J. C. Mayo's wildcat is 500 feet west of the west bank of Trinity river along the south line of the survey from the intersection of river and survey and 466 feet at right angles. The well, on the Rumayor prospect, is in the area where several wildcats have tested salt water in Cockfield formation. Cockburn Oil Company drilled Moore 1 in the same survey, and it tested salt water and was abandoned at 5454 feet in February of this year.

Another wildcat location has been announced for the Willis area of Montgomery County. W. W. Chapman Trustee has made location for Thomas Foster 1 in the D. Pevehouse Survey. It is located by starting at the southeast corner of the survey, thence 300 feet west from the west bank of the San Jacinto River, thence 1900 feet north at right angles. The test is in a 665-acre tract. It is south and west of Mid Texas Oil Company's Oliver 1, which showed for a gas well in Cockfield formation but was later abandoned at 4025 feet in salt water sand.

The second producer was completed on the northeast side of the Anahuac field, where Humble Oil & Refining Company recently completed Boyt 1, H. & T. C. Survey, Section 44. Humble's Johnson 4, south offset to Boyt 1, H. & T. C. Survey, Section 47, was finaled for 24 barrels of 34.4 gravity oil per hour through ¼-inch choke, with a tubing pressure of 600 pounds. The hole was drilled to 7100 feet, and top of the oil sand was found at 7058 feet. Seven-inch casing was set at 7080 feet. Only 16 days were required to complete Johnson 4; it was spudded August 11 and completed August 27.

On the west side of the north portion of Anahuac field, Humble Oil & Refining Company completed Shaver 1, H. & T. C. Survey, Section 53. The well made 25 barrels of 35.3 gravity oil per hour through ¼-inch choke. Oil sand was encountered at 7080 feet and 7-inch casing was set at 7108 feet. Bottom of the hole is 7122 feet.

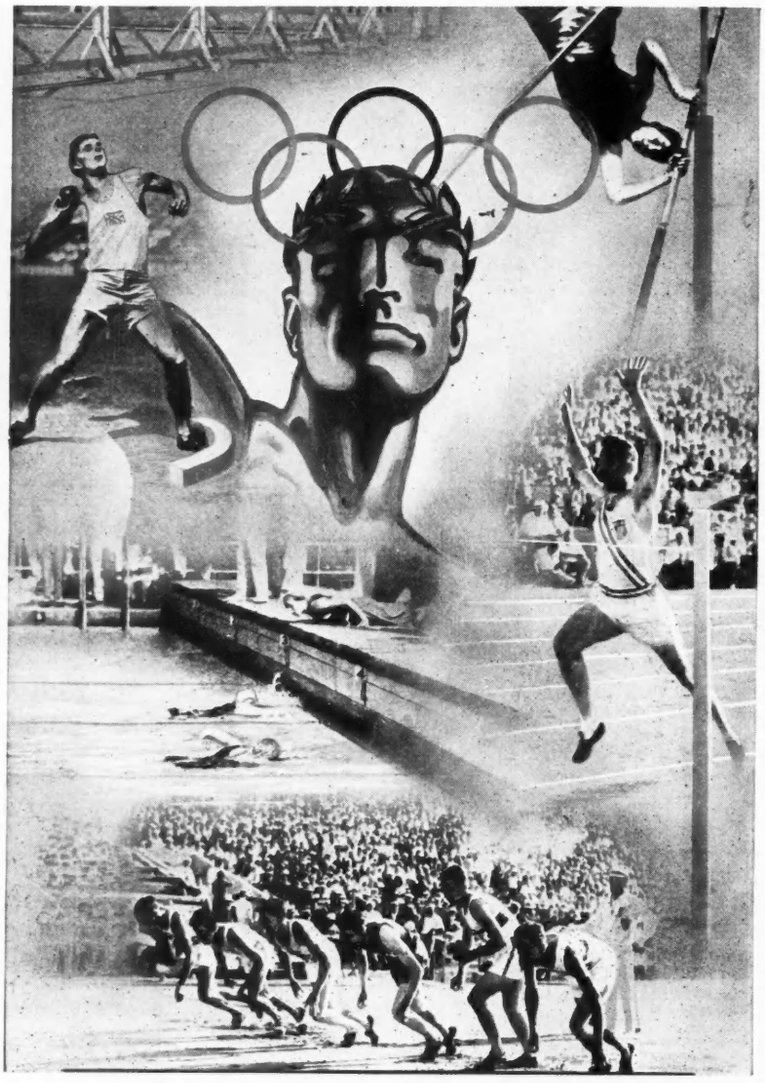
The same operators finally completed White 12 on the north flank of the field. The well made five barrels per hour through ¼-inch choke, with a tubing pressure of 140 pounds and a casing pressure of 1025 pounds. White 12 was completed in sand from 7117 to 7120 feet.

On the extreme northwest side of Anahuac and approximately 2500 feet from production, Humble Oil & Refining Company's White B-5, J. McGahey Survey, was drilling in shale at 7041 feet and should be down to the producing horizon the coming week.

Stanolind Oil & Gas Company's State 3, Turtle Bay, Chambers County, was preparing to test a shallow sand at 6554 to 6557 feet at the end of the week. The hole was drilled to 6672 feet in sand, and after running an electrical logging device the well was plugged back to test the sands mentioned above. The field has been producing from 6626 feet.

On the northwest side of the South Houston field, Harris County, Stanolind Oil & Gas Company was completing First National Bank 4, Callahan & Vince Survey, at 4825 feet. The well, at the end of the week, has failed to kick off and fluid is approximately 2411 feet up in the hole. The operators were preparing to complete Owens 1, north offset to the operator's Mathews 1, H. & T. B. Survey, No. 6. They are waiting on cement to set at 4775 feet. The company completed two wells at South Houston last week. Williams 1, made 233 barrels through a ¼-inch choke from 4820 feet and Lamb 1 made 310 barrels daily from 4775 feet.

The third wildcat location on the Lochridge prospect in Brazoria County was made last week by Gulf Oil Corporation. Wilkes Smith 2 will be drilled 1300 feet west and 150 feet north at right angles from the southeast corner of the Wilkes Smith lease, J. W. Hall Survey. It is in the area where the operators drilled Wilkes Smith 1 to 6647 feet before abandoning. The Gulf Oil Corporation will use fuel from Fairfield 1, which was completed as a gas well at 6267 feet two weeks ago.



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Record Extension

MAY ADD 19,000 FEET TO WITHERS FIELD LENGTH

Houston. — Withers field, Wharton County, gave indications of being extended 19,000 feet southeast last week when Texas Crusader-Cockburn Oil Corporation's Fee 1 showed oil in commercial quantities from Lower Marginulina-Frio sand on a drill stem test at 5540 to 5562 feet. Successful completion of the well will contribute one of the largest single well extensions on record in the Texas sector of the Gulf Coast. At the end of the week the crew was waiting on cement to set after setting 7-inch casing at 5562 feet with 500 sacks of cement. Casing will be perforated with 10 holes between 5551 and 5562 feet and a production test will be made.

The first indication that the wildcat would be a producer was August 23, when drill stem test taken from 5512 to 5557 feet showed 2½ stands of oily mud, 20 percent oil, in 18 minutes through 2 quarter-inch chokes. The working pressure was 96 pounds. Later the well was cored five more feet in saturated oil sand. The second drill stem test, made August 25 from 5540 to 5562 feet, showed 1250 feet of 26 gravity clean oil and 40 feet of mud and oil in eight minutes through 2 quarter-inch chokes, with a pressure of 50 pounds. The operators are erecting two 1000-barrel tanks.

It is believed that when the well is completed a large drilling campaign will start. Several major and independent oil companies control acreage in that area. Besides Texas Crusader Oil Company and H. C. Cockburn, Atlantic Oil Producing Company, Humble Oil & Refining Company, Continental Oil Company, Shell Petroleum Corporation, Sun Oil Company and Mid-Texas Oil Company hold acreage near the well.

Credit for the discovery of the Magnet area is due American Seismograph Company which worked the area with reflection seismograph.

On the Withers-Magnet map, Texas Crusader-Cockburn Oil Corporation's Fee 1 is shown southeast of the Withers field. Around 14,000 feet northeast of this test is Continental Oil Company's Weakly 1, J. Clements Survey, which was coring below 5358 feet in Discorbis formation and reported running lower than Texas Crusader-Cockburn Oil Corporation's Fee 1. Weakly 1 is believed to have cut a fault. During the past week considerable interest was centered around this test, but after information was out that the well topped the Discorbis over 400 feet lower than Fee 1 little interest was shown in it.

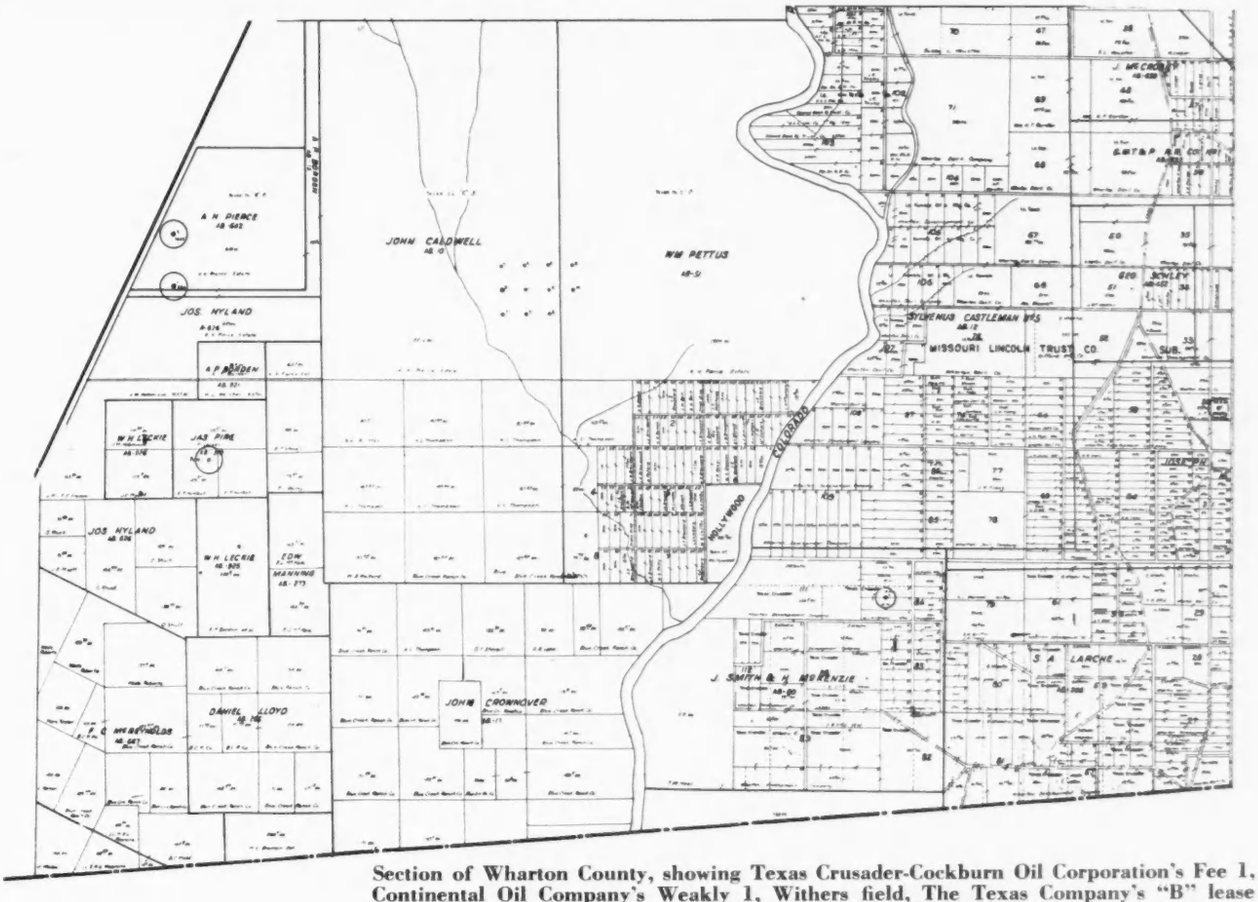
West of Withers field is The Texas Company's "B" block, where the operators have developed a large gas reserve with possibilities of oil production. South of The Texas Company's "B" lease is Pure Oil Company's Blue Basin prospect, where the latter has drilled three dry holes and made location for two new wildcats.

The structure at Withers may be faulted on the order of that of Dickinson field in Galveston County, where large grabens separate the different producing areas.

If the Withers and Magnet areas connect the resulting field will be larger than Anahuac field in size, but with not so desirable a sand section. If the two areas connect, the resulting field will be nearly as large as Conroe field in Montgomery County, considered the largest field on the Texas Gulf Coast.

Fee 1 is running approximately flat with the Withers field, and the oil sands are approximately the same level. The "B" lease on the Five Corners prospect west of Withers field is also believed to be on the same structure and believed to have a large graben in the middle. Below the "B" lease and in the Blue Basin area where the Pure Oil Company is drilling, is thought by some to be on the same structure also, with a fault cutting it off from the "B" lease.

The past week Pure Oil Company abandoned its third wildcat in the area. A. P. Borden et al 1, W. H. Leckie Survey, was completed and plugged at 7940 feet after coring salt water sand. Pure made two more locations for tests on the Blue Basin prospect. National Bank of Topeka 1 is 996 feet southeast and 1145 feet northeast

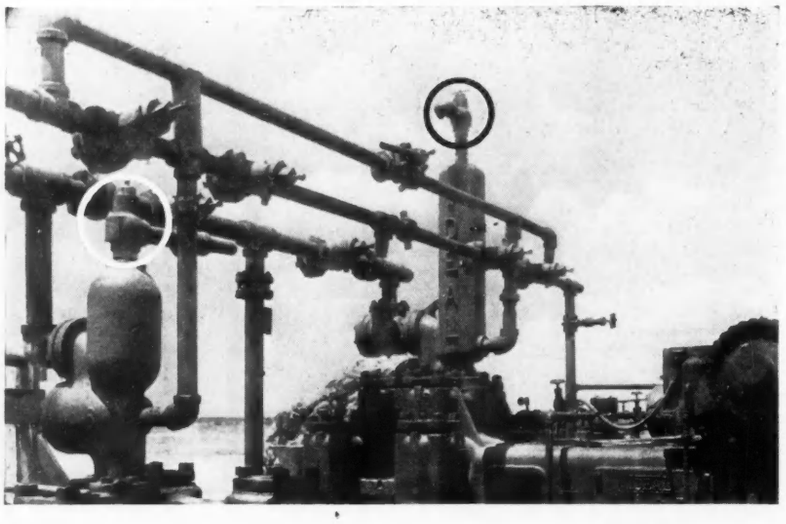


Section of Wharton County, showing Texas Crusader-Cockburn Oil Corporation's Fee 1, Continental Oil Company's Weakly 1, Withers field, The Texas Company's "B" lease and the Blue Basin prospect. (Map courtesy of Gulf Coast Engineering Company)

of the most westerly northwest corner of lease in the W. F. York Survey, Abstract 397. G. A. Duffey 1 is 3584 feet wast and 660 feet south of the northeast corner of the south half of Section 107, Abstract 107, E.T. R.R. Survey.

The Texas Company's Pierce Estate C-10 was waiting on cement to set at the end of the week after setting 7-inch casing at 5551 feet. The bottom of the hole is at 5555 feet. This well is located on the southeast side of the field.

During 1935 the Withers-Magnet area was one of the hottest areas in the Gulf Coast with approximately six blocks taken in the area. Pure Oil Company worked the Blue Basin prospect with reflection seismograph and torsion balance and made a selection of approximately 6000 acres. The Texas Company drilled its second wildcat on the Pierce Estate acreage south of Pickett Ridge field and discovered the Withers field. North and east of the Withers field, Humble Oil & Refining Company leased around 6000 acres around Lane City and so did Continental Oil Company. This area was worked with reflection seismograph and torsion balance. Near the town of Wharton and in the Spanish Camp area, Felmont Corporation leased considerable acreage and took two large blocks. The corporation now has a location on the Spanish Camp prospect. Southeast of the Withers field, H. C. Cockburn bought the Wharton County Development Company acreage in the Magnet area in fee. He sold off acreage to the companies which have leases in the area.



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WATCHING WILDCATS
Extensions are recorded; Jennings and Port Barre

Lake Charles.—Interest in the Louisiana Gulf Coast last week centered around several active wildcats and new wildcat locations. Included in these were: Mike Hogg's Lawes Realty Company 1 on the Charenton prospect, Stanolind Oil & Gas Company's Calcasieu National Bank 1 on the South Jennings prospect, a new wildcat location on the Nibletts Bluff prospect, Pan American Production Company's Haas-Hirsch 1, extension of the Port Barre field, St. Landry Parish, extension of the Roanoke field, Jefferson Davis Parish.

Six miles east of Jeanerette, St. Mary Parish, Mike Hogg's Lawes Realty Company 1, Section 30-13s-10e, was preparing to make another drill stem test in sand showing oil at 6802 feet. This will make the seventh drill stem test made on the wildcat in sand showing oil. The crew has cored and drilled oil sands with shale breaks from 4148 down to the bottom of the hole, and it is the consensus of opinion that the test will be a discovery well.

West of Mike Hogg's Lawes Realty Company 1 and at Jeanerette field, St. Mary Parish, Herton Oil Company finaled Bayou Teche 1, Section 40-13s-9e, flowing at the rate of 650 barrels daily from Miocene sand at 6680 feet. The 36.6 gravity oil came in flowing through a ¼-inch choke and with a tubing pressure of 1000 pounds. The test was drilled to 6680 feet in sand showing oil. Top of the sand was 6661 feet. Seven-inch casing was set at 6651 feet. The same operator's Barrilleaux 1, Section 59-13s-8e, was fishing at the close of the week. The drill stem was stuck at 8200 feet after the crew had reached 8260 feet. The company has made location for Banta 5 at Jeanerette. It is 200 feet east and 200 feet north at right angles from Bayou Teche 1, in Section 40-13s-9e.

On the South Jennings prospect in Jefferson Davis Parish, Stanolind Oil & Gas Company were preparing to set 9⅝-inch casing last week at 8900 feet to protect the hole. After drilling deeper the operators will plug back and perforate casing where showings of oil were encountered. At 8552 feet it is reported that on an electrical logging device the well showed 150 ohms resistivity and a large number of milivolts porosity. Several showings of oil were encountered in the hole below 8000 feet.

Another new wildcat location was made on Nibletts Bluff prospect in Calcasieu Parish. W. Lehey et al made location for Bass 1, 200 feet north and 200 feet east of the southwest corner of Section 9-10s-12w. It is west of the town of Vinton. The wildcat is being drilled in the area where Plummer & McDaniels and Oliphant et al drilled Calcasieu National Bank 1, which had showings of oil at 6350 feet. Adams Louisiana Company took a large spread of acreage in this area in 1935 and worked it with reflection seismograph. Humble Oil & Refining Company, Magnolia Petroleum Company, Kirby Petroleum Company, and Sun Oil Company hold considerable acreage in this area.

Port Barre Extended

The deep west flank production at Port Barre, which was discovered by Pan American Production Company December

5, 1935, was extended 300 feet south last week when the company completed Haas-Hirsch 2, Section 4-6s-5e, making 405 barrels of 34 gravity pipe line oil from 4821 feet. The oil came in flowing through a 7/64-inch choke. Tubing and casing pressures were 475 pounds each. The hole was originally drilled to 4709 feet in salt and was plugged back to 4820 feet. Seven-inch casing was cemented at 4766 feet. This was the fifth well drilled by Pan American Production Company on the west side of the field. Two of the five wells have been commercial producers. The south and southwest portion of the area is still open for development. Several other operators at Port Barre have tried to find flank production at Port Barre but failed. It is reported that Shell Petroleum Corporation has been working on the north flank of the field with geophysical instruments and is making a location for a test there.

Roanoke field, Jefferson Davis Parish, was extended southwest when Humble Oil & Refining Company finaled Divilbiss B-4, Section 11-9s-4w. The test came in flowing pipe line oil at the rate of 300 barrels daily through a ⅛-inch choke, with a tubing pressure of 175 pounds and a casing pressure of 575 pounds. Before the well was completed a drill stem test was made from 8690 to 8699 feet after casing had been perforated with 19 holes at that depth. The drill stem test showed 97 thribbles of oil in 55 minutes. The hole was drilled to 8714 feet and 7-inch casing was cemented at 8690 feet. Cement was drilled out to 8699 feet.

Stanolind Oil & Gas Company's Houssiere Latrielle 16, Section 47-9s-2w, Jennings field, Acadia Parish, made a drill stem test from 6840 to 6853 feet and showed 17 barrels of pipe line oil in 10 minutes.

At Lake Washington, Plaquemines Parish, Gulf Refining Company made a drill stem test which showed wash water in Levee Basin District 5, Section 11-18s-25e. During the past week the operators perforated casing from 4640 to 4646 feet and the test flowed wash water for 12 hours and the casing pressure was 450 pounds. The operators have recemented the casing and will make another production test.

On the Abbeville prospect, Vermilion Parish, Continental Oil Company has started drilling on Hebert 1, Section 20-12s-3e, after waiting on cement to set at 10,947 feet. At the end of the week the crew was drilling in shale at 11,127 feet. The test was drilled to 11,505 feet and plugged back, due to condition of the hole.

SOUTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ENGLISH BAYOU—		
Fohs Oil Co., Airhart 2	701	7050
JEANERETTE—		
Herton Oil Co., State Bayou Teche 1	625	6681
PORT BARRE—		
Pan American Prod. Co., Haas-Hirsch 2	450	4907
ROANOKE—		
Humble, Devilbiss B-4	300	8708
TEPETATE—		
Continental, Klump 2-A	320	8321
ST. MARTINVILLE—		
Tide Water Oil Co., Domendeaux 1	*	8151
WEST HACKBERRY—		
Stanolind, Duhon 2	50	3199

*Failures; †Junked; ‡Million cu. ft. gas.

Rodessa Pressure

ENGINEERING COMMITTEE TO CHECK PERFORMANCE

NORTH LOUISIANA

WEEKLY STAFF REPORT

Shreveport.—Forty oil wells and five gas wells have been selected as key wells for bottom hole pressure tests and study of oil-gas ratios in the new inter-company cooperative plan to reduce oil-gas ratios in the high-pressure Rodessa field, under direction of the Rodessa Operators Committee. To date Standard Oil of Louisiana has been the only company to attempt re-working of wells which is in progress on its Lawton 5, Section 14-23-16, in the center of the high-pressure area.

The northeast end of the Rodessa field occupied the spotlight this week as Phillips Petroleum Company's Interstate Royalty Company 1 NE NW NE 16-23n-15w, ½-mile southeast of production cemented casing after topping saturation in the Young series at 6035 feet. Seven-inch pipe was run to 6040 feet while hole was bottomed at 6076 feet.

One and one-half miles northwest of nearest production in the Cass County, Texas, part of the field, American Liberty Oil Company's Gilbert Stephens 1, Jacob Carstner Survey, swabbed salt water with a show of oil at 6084 feet, 4 feet in the Young horizon, and after taking another core, plugged back to 6033 feet to test the Dees horizon where some saturation was reported. This test was reported to have checked 72 feet lower on top of the Young than Superior Oil Company's Stallcup 1, Robert Trammell Survey, and 67 feet lower than this well on top of the Dees. The Young horizon, according to the generally accepted water level table at Rodessa, was below the water line but the Dees horizon is above the water level.

In the Converse area of Sabine Parish, Lee Whitehurst and associates were attempting to pump mud into Whitney Cor-

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poration 1, NE NW Section 8-9n-13w, which blew wild making an estimated 20,000,000 cubic feet of gas. Flow was somewhat smaller when hole partly bridged several hours after the first blow out. Total depth is 5356 feet.

A new depth record for North Louisiana was established last week as Sugar Creek Syndicate's Darrett 2, C SE SW Section 31-20n-5w, Claiborne Parish, reached 8616 feet in shale and lime. This barely passed Ohio Oil Company's Cotton Valley hole, R. L. Holloway 6, Section 23-21-10, Webster Parish.

Darrett 1, which is owned jointly by Standard Oil Company of Louisiana, United Gas Public Service Company and Triangle Drilling Company, was lubricating with crude oil Friday to loosen stuck drill stem at 6200 feet. The test is located in the Sugar Creek Gas field, which produces wet gas from the 4300-4500 foot horizon.

Ohio Oil Company last week completed R. L. Holloway 6, located 660 feet south and 760 feet west of center Section 23-21n-10w in the Cotton Valley field of Webster Parish, flowing 50.4 gravity oil from the top of the Travis Peak.

Initial production was 25 barrels in 30 minutes through ⅜-inch tubing choke with 1750 pounds tubing pressure and 2000 pounds casing pressure. Having blown off the first head, subsequent gauges showed an average of 26 barrels per hour through ⅜-inch tubing choke from 11:40 a.m. until 3:10 p.m. Later gauges showed a production of 20 barrels per hour through same sized choke with an estimated 5,000,000 cubic feet of gas.

While the well was drilled to 8534 feet, production is coming from a plugged-back depth of 5556 feet. Casing was gun perforated from 5550-6 feet in a 30-foot sand showing.

The test originally was planned as a 10,000-foot hole. Drilling difficulties in the form of tremendous gas pressure were encountered after the size of the hole was reduced to 6⅝ inches and viscosity of mud was lowered to the danger point. Operators feared that the small drill stem could not safely penetrate deeper and were able to take only two additional cores, both of which showed heavy gas and distillate saturation.

The well is located centrally in the Old Cotton Valley field which produced oil and gas since August 25, 1922. It has two producing levels, one in the 2900-foot level and one in the 4700-foot level.

With an elevation of 210.5 feet the well logged top of the Glen Rose at 3260 feet; top red beds, 2260 feet; top anhydrite 4127 feet; base anhydrite 4588 feet; top Travis peak 5518 feet.

Ohio Oil Company announced locations for Bodcaw Lumber Company 1, located 1940 feet north and 660 feet west of southeast corner of Section 23-21-10, 1¼ miles south of the Holloway producer, and R. M. Coyle 1 located 1980 feet north and 760 feet west of the southeast corner of Section 22-21-10. The first Bodcaw test will be sunk to 10,000 feet, operators said.

J. P. Evans cemented 7-inch casing on bottom at 5758 feet in J. T. Johnson 1 SW NW SW 36-18-9 Webster Parish, Sibley district, after coring porous oolitic lime from 5738-46 feet thence into hard shaley lime. Sinking the test to the Travis Peak is being considered provided companies which are heavily interested in the block will contribute to drilling cost. On the base of the Massive anhydrite at 4998 feet the test checked 8 feet higher than Evans' discovery gasser, Chricton 1.

Several miles east of the Evans block, J. W. Leonard's Courtney Heirs 1 SW 5-17-7 Bienville Parish, was reaming to bottom at 5844 feet. Cores have indicated little porosity up to this depth. Logging top of the Massive anhydrite at 5219 feet,

ALLOWABLE

Shreveport.—Although the total allowable for September at Rodessa was increased 3000 barrels to 60,000 barrels daily, the per-well allowable of 240 barrels in effect during August will continue next month, officials of the Minerals Division, Louisiana Conservation Commission, said after the allowables for the various fields were announced by William G. Rankin, new conservation commissioner, who recently succeeded Robert S. Maestri, when the latter was named mayor of New Orleans.

The rest of North Louisiana's allocation of 20,000 barrels for September is the same as for August and as has been the custom is not broken down into districts.

South Louisiana districts were given an allowable of 155,200 barrels, making a total for the state of 235,200 barrels. South Louisiana fields given increases were: Leeville, increased 750 barrels; Basile, 250 barrels; Caillou, 400 barrels and Sulphur Mines, 250 barrels.

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Pine Island)—		
B. Bender, Starr 2, 27-20n-16w....	25	2665
GRANT PARISH (Urania)—		
Acadia Prod. Co., Swope B-2, 18-9n-1e	50	1607
LA SALLE PARISH—		
H. L. Hunt, La. Cent. Lbr. Co. 2, 26-10n-4e	*	1856
MOREHOUSE PARISH (Monroe)—		
J. E. Farrell et al, State of La. 31, 1-30n-4e	¶2	2214
United Gas Public Service Co., Crossett 40, section 30-22n-5e.....	¶6	2250
OUACHITA PARISH (Monroe)—		
Interstate Nat. Gas Co., Fee 49, 45-19n-3e	¶3	2193
RICHLAND PARISH—		
Arthur Wray, Slocum 1, 19-17n-6e..	*	3027
CASS COUNTY (Texas) (Rodessa)—		
Superior Oil Co., Chew A-1, Robt. Trammell sur 2000		5956
Showers and Moncrief, Stallcup 7, Robt. Trammell sur, ...1750		5994
American-Liberty Oil Co., Baugus 1, Robt. Trammell sur 3000		6007
United Gas Public Service Co., Stewart 2, John Collum sur 3000		6070
Magnolia Pet. Co., Annie S. Hall 3, John Collum sur 1750		6097
CADDO PARISH (Rodessa)—		
Tri State Oil Co., Hall 2, lot 12, blk 29, Rodessa townsite 500		6084
United Gas Pub. Serv. Co., Thomas 7, 23-23n-16w 4000		6010
Phillips Pet. Co., Cora Wood 1, 8-23n-15w 2000		5994

*Failures; †Junked; ¶Million cu. ft. gas.

ARKANSAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CRAWFORD COUNTY—		
Donald Trumbo et al, Craddock 1, 3-11n-30w	*	1893
MILLER COUNTY—		
L. H. Mahan et al, Miller L&T Co. 1, 29-18-27	*	1845
MONROE COUNTY—		
Jno. G. Burch et al, Stimson 1, 27-4n-2w	*	2290
OUACHITA COUNTY—		
Carnes & Harrell, Dunn & Robinson 1, 7-12-19	*	2415

*Failures; †Junked; ¶Million cu. ft. gas.

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the test checked 121 feet lower than Evans Chrichton 1.

United Gas Public Service Company is running profile north and northeast of Wheeler A-1, NE NE 16-18-16 Caddo Parish, Blanchard district, where the upper Travis Peak paid off with a 2,494,000 cubic foot wet gas well. No new locations have been announced, however, United Gas Public Service Company and Belchic & Laskey, local independents, have considerable acreage which will be forfeited if tests are not spudded prior to September 9.

In Shelby County, East Texas, H. A. Stebbinger and associates, Pickering Lumber Company 1, C. F. Henry Survey, was being cored deeper below where it blew wild with an estimated 20,000,000 cubic feet of gas daily. Operators were coring below 5030 feet in Glen Rose series.

3 ARKANSAS STARTS

El Dorado.—Three drilling permits were authorized last week by the Arkansas Conservation Commission as follows:

Dallas County—A. F. Tarver, Shreveport, B. T. Welbon 1, 330 feet south and west NEc NE SE 21-9-13.

Franklin County — Ozark Natural Gas Co., Fort Smith, Arkansas, J. E. Bonner 1, center NW NW 13-8-29.

Union County — McCreslenn Oil Company, El Dorado, Arkansas, L. Atkins 3, located 619 feet north and 310 feet east SWc SW NE 3-18-13.

Lance Creek Test

BEING STARTED FOUR MILES FROM PRODUCTION

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper, Wyo.—Testing of the area south of Lance Creek on what is believed to be a separate structure extending four miles southwest from the field was begun this week. Adams-Louisiana Company of Houston is moving in rotary for A. A. Spaugh 1, C NW NE 18-35n-65w, South Lance Creek, Niobrara County, eastern Wyoming. The drilling firm of Manning & Martin, Inc., of Denver and Tulsa, has contracted for the well and are drilling the test for an acreage interest.

Adams-Louisiana Company is drilling the test on the strength of a seismograph survey, which shows a structure embracing approximately four sections of land to the south and west of the field. At the Spaugh location the Sundance will be reached at around 3900 feet, the usual depth at that horizon in the Lance Creek field. On the southwest end of the structure where it joins to the Hartville uplift the Sundance is expected at around 1500 feet.

An outside location on the west end of the Lance Creek field was made last week by Holly Development Company of California and A. B. Cobb, who has been active in the development of the Cut Bank field. The well, Novack 1, NEc SW 6-36n-65w, is moving in material.

Argo Oil Company started a new well in the Lance Creek field, Elliott 5, C NW NW 5-35n-65w, and is moving in material.

A deepening operation to the Sundance was started by The Ohio Oil Company in the Lance Creek field. Elisabeth Lamb 2, C NE NE 5-35n-65w, is rigging up rotary. Well was originally completed in 1921 in the Muddy sand for 32 barrels oil daily at

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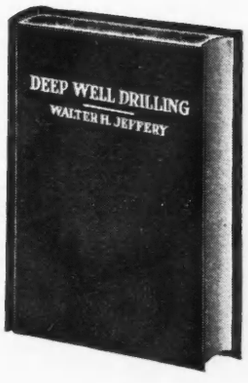

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3070 feet, and in 1925 deepened and recompleted for 12 barrels daily at 3485 feet in the Dakota sand. Ohio Oil Company's Richards & Comstock 3, 220 feet from the north and 630 feet from the east line of 32-36n-65w, is rigged and ready to spud.

On the West Mule Creek structure, Niobrara County, Chester Oil Company's Fee 1, NE NE NE 14-39n-61w, is drilling at 820 feet.

Northern Wyoming

A near completion is reported in the Byron field, Big Horn County, northern Wyoming. Ohio Oil Company's Orson Vail 1, C NW NE 23-56n-97w, is coring excellent black oil saturation in the Tensleep sand at 5186 feet. The 7-inch casing is cemented in the top of the Embar at 5009 feet. Ohio Oil Company's Irene Lindsay, C NW SE 25-56n-97w, Byron, is drilling at 2135 feet.

In the Byron-Garland field, Big Horn County, Peter Evanoff's McAllister 1, Lot 40, NW NE SE 3-55n-97w, is still fishing at 2805 feet.

Resolute Oil Company's No. 1 State, C NW SW 16-57n-101w, on Badger Basin, Park County, is drilling at 5950 feet.

West Central Wyoming

Sinclair-Wyoming Oil Company's Muskrat 2-C, NE SW SW 11-32n-92w, in the Muskrat field, Fremont County, west central Wyoming, is coring sandy shale at 5586 feet.

In the Wertz field, Sinclair-Wyoming Oil Company's Wertz 10-A, SE NW 7-26n-89w, deep test to unexplored sands, Carbon County, is coring sandy shale at 4075 feet.

South Central Wyoming

New location of Ohio Oil Company in the Rock River field, Carbon County, south central Wyoming, got under way this week. Harrison-Cooper 11, NE SW SW 35-20n-78w, a well directly from the surface to the Sundance, is spudding.

In the Big Medicine Bow field, Carbor County, central Wyoming, The Ohio Oil Company and The California Company's Union Pacific-Johnson 3, C NE NE 23-21n-79w, is coring at 5703 feet, feeling ahead for the Second Sundance sand. Test will make a well in the First Sundance sand at 5517-57 feet.

Tri-State Area

A showing of oil and gas was encountered in Mountain Fuel Supply Company's Allen 1, NE SW NE 32-12n-97w, on the Powder Wash structure, Moffat County, northwestern Colorado, at 3043 feet, where it is now coring.

In the Hiawatha field, Moffat County, company's Georgia Kuykendall 1, NE NE SE 22-12n-100w, is underreaming to 2526 feet. Well is a deepening job.

Mountain Fuel Supply Company's State 1, NW SE 17-3n-24e, on the Clay Basin structure, Daggett County, northeastern Utah, is drilling at 3703 feet.

W. T. Nightengale 1, SW NE NW 32-18n-104w, south extension test to the South Baxter Basin field, Sweetwater County, southwestern Wyoming, is drilling at 2670 feet where 8⅝-inch casing is cemented.

NEW REFINERY
Cut Bank market may get relief as a result

Great Falls, Mont.—Although wells are completing in the Cut Bank field, Glacier County, northern Montana, many are standing without producing due to no market outlet for the oil. This week came what is believed to be the solution of the problem when L. B. O'Neil, president of Santa Rita Oil & Gas Company, announced the building of a new refinery. The refinery is the means of bringing the market up to production. The new refinery will cost around $5000 and will be of the cross-cracking type.

Four wells finished, one a dry hole, in the field this week as no locations were staked. Nadeau Brothers' Ewald 1, C NE SW 9-32n-5w, swabbed 130 barrels oil in the first 18 hours with hole bottomed at 2989 feet. The producing sand was found at 2960-2988 feet and the Ellis at 2988-2989 feet.

R. C. Tarrant's Fee 2, NW NE 13-34n-6w, pumped 92 barrels oil in the first 24 hours at 2790 feet. Oil rose 1000 feet in the hole after 48 hours. Producing sand was encountered at 2785-2790 feet.

Wm. Hanlon has a 10-barrel well in Alloted 131, 1, Lot 10, 7-32-5w, and fluid rose 600 feet in the hole. Depth is at 2840 feet. Eflis was found at 2820-

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2840 feet and the producing sand at 2821-2825 feet.

A dry hole of the Steele Creek Producing Company, Tarrant 1, C NW SW 19-34n-5w, is being plugged and abandoned at 2848 feet.

To all indications a new pool was developed in the Kevin-Sunburst field, Toole County, northern Montana, when Engleking & Pfabe completed a well in the east area of the field where there has been little or no drilling. One failure and two oil wells completed in the field this week as three new wells started. Engleking & Pfabe's Klawitter 1, SW SE 7-35-1w, is running tubing to acidize at 1684 feet. Well will make an average producer.

A. E. Crumley's Shaw 10, NE SW NE 35-36n-2w, was shot with 40 quarts of nitroglycerin at 1617 feet, total depth, and is now cleaning out. Before shot, oil stood 250 feet in the hole. It is estimated to make around 50 barrels.

Operators will acidize Mahill Oil Company's Van Note 1, NW NW SW 30-35n-2w. A small showing of oil at the Ellis-Madison at 1527 feet was encountered. Hole bottoms at 1531 feet.

Welch Brothers' Dewald 1, SW NE NE 26-36-2w, is plugged and abandoned at 1787 feet.

Three new locations for the week report as follows: Big West Oil Company's Dahlquist 3, SE NW NW 21-35-3w, spudding at 10 feet; No Jack Oil Company's Lashbaugh 1, NE SW NW 34-35-2w, spudding at 10 feet, and Deloraine Oil Company's Government Permit 052611 4, NW SW NE 28-35-1w, drilling at 1150 feet.

MOUNTAIN STATES

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
GLACIER COUNTY		
(Cut Bank Field)—		
Montana Power Gas Co., Robb 1, cne sw 9-33n-5w	75	2870
Montana Power Gas Co., Sate 1, nw se 16-35-5w	¶8	2846
TOOLE COUNTY		
(Kevin-Sunburst Field)—		
Texas Pacific Coal & Oil Co., Pewter 14, nw ne ne 21-35-2w	200	1525
Coolidge & Coolidge, Maley 1, sw sw sw 30-36-1w	*	1828
Agen-Goeddertz, Goeddertz 2, cse ne 15-35n-3w	¶2	1835
PONDERA COUNTY		
(Pondera Field)—		
Warren Hastings, Erickson 3, nw nw 10-27n-4e	30	1931
COLORADO		
ARCHULETA COUNTY—		
Wm. E. Hughes Estate, Fee 8, nw se ne 24-33n-2e	*	....
WYOMING		
BIG HORN COUNTY (Byron Field)—		
Ohio Oil Co., Robert Till 1, cse sw 24-56n-97w	262	5417
CARBON COUNTY (Rock River Field)—		
Ohio Oil Co., Diamond Cattle Company 7, cne 35-20n-78w	240	3210
HOT SPRINGS COUNTY		
(Grass Creek Field)—		
Ohio Oil Co., Mill Iron Cattle Co. 73, ne sw 19-46n-97w	248	3897
NIOBRARA COUNTY		
(Lance Creek Field)—		
Ohio Oil Co., Carrie Putnam 5, cnw sw 33-36n-65w	1002	3963
WESTON COUNTY (Osage Field)—		
Hawkeye Supply Co., 5, cnw sw 19-46n-68w	20	1450
Dubuque-Wyoming Syndicate 2, se nw nw 31-46n-63w	15	1510

*Failures; †Junked; ¶Million cu. ft. gas.

Grapevine Strike

WILDCAT TRIES TO BLOWOUT WHEN BAILED TO 4444 FEET

WEEKLY STAFF REPORT

Los Angeles.—Reserve Oil & Gas Company's Ritchie 33-2, wildcat in the Grapevine area 25 miles south of Bakersfield, started to blow out when bailed down for a test of the 8⅝-inch shut-off at 4444 feet. The drill pipe was run and the control head put on, after which the hole was cleaned out to 4474 feet. A liner will be run and the effectiveness of the shut-off determined by a production test. Depth is 4508 feet, with oil sand cored at 4447-4490 feet, and oil stained sand which tested wet cored at 4490-4508 feet. The hole is plugged with cement at 4508-4474 feet. It is reported the hole was open only 2 feet below the shoe when bailed for the shut-off test.

Ritchie 33-2 is in Section 33-10n-19w, about 5 miles east of Wheeler Ridge field and about ½-mile northeast from Reserve Oil & Gas Company's Ritchie 33-1, which was drilled to 6030 feet and plugged back to 4805 feet, from where it is producing 500,000 cubic feet of gas but no oil.

Development of commercial oil from Ritchie 33-2 will mark the discovery of a new field. Sands open to the well are Temblor (lower Middle Miocene) and are possibly equivalent to the Vedder zone from which production is obtained in Edison, Round Mountain and Mount Poso oil fields, farther north. They are probably older than the Maricopa formation from which nearby Wheeler Ridge wells are producing.

Ohio Oil Company's Title Insurance & Trust 1, wildcat well about 3 miles east of Reserve's Ritchie 33-2, above, was abandoned at 5507 feet. The hole was drilled through roughly 600-700 feet of ancient basalt flows and was bottomed in gray sand.

Stevco Oil Company spudded No. 1 in the Adam area, one mile south of Santa Maria and about 1 mile west of Union Oil Company's Mahoney 1, and is drilling at 1290 feet.

R. R. Bush Oil Company's Hancock-Bush-Brown 1, Adam area, is being cored ahead at 3725 feet in Monterey sandy shale. Top of the Monterey was cored at 3100 feet. Production from other wells of this area is obtained from sands and fractured shales of the Monterey series at and near their contact with the underlying Franciscan metamorphics. Each of the producing wells of this area found this contact at a point between 2500-2800 feet.

Bankline Oil Company's Permit 1912, wildcat at Coal Oil Point, west of Santa Barbara, has been plugged back to about 3250 feet and will be redrilled. This is the third attempt to direct a hole from this surface location into a structure believed to lie off-shore. The present hole was drilled and directed to 4708 feet and the bottom plugged with 225 sacks of cement.

Running Low

Shell Oil Company's K. C. L. Stevens A 6-29, operator's second well in Ten Section oil field, is being cored at 7616 feet. The discovery well, Shell Oil Company's K. C. L. 1, located ¼-mile to the northeast, was bottomed at 7888 feet, and 6⅝-inch water string was cemented at 7800 feet. Unless the structure drops away more suddenly than is expected, the present well should have already found the top of the productive zone.

Ohio Oil Company has staked location for K. C. L. E-1, 660 feet north and 660 feet east from the center of Section 19-

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30s-26e. This location falls approximately 1 mile north and ½-mile west from the discovery well, indicated above.

Ohio Oil Company's K. C. L. D-1, wildcat well in the Strand area 4½ miles north of the new Ten Section field, is abandoned at 9003 feet. A few thin streaks of oil sand were cored but the porous formations were predominantly barren.

Petroleum Securities Company's Home Ranch 3, Bardsdale area, 22 miles east of Ventura is standing cemented with 9-inch casing on bottom at 4515 feet. The casing will be perforated and tested in stages.

Franz-Nelson Petroleum Company's Huntington-Redondo 1, semi-wildcat in the southeast corner of Redondo Beach and near the southwest edge of Torrance field, was recompleted August 18 pumping 450 barrels a day of 22 gravity oil cutting 20 percent. This is the best of the recent completions in the Redondo Beach area. Depth is 4823 feet, plugged with cement to 3650 feet; 8⅝-inch water string was cemented at 3010 feet, and 670 feet of 6⅝-inch liner, all perforated, was landed on the plug at 3650 feet. This zone was tested when first encountered, but sand troubles prevented a conclusive test of its possibilities. Well was cored ahead to the schist at 4822 feet. Top of the nodular shale was cored at 4500 feet and top of the conglomerate was cored at 4809 feet. The former carried lots of gas and oil in its partings, but the latter contained salt water with only traces of oil. After a test of the conglomerate zone the well was plugged back and tested in stages to the present zone.

Republic Petroleum Company's Republic-Trust 1 was bridged from 5960 feet to the 7-inch casing shoe at 5883 feet, following which the cement was drilled out and the hole tested in stages. Water zones were located between the oil sands at the shoe and the oil zone at 6025-6125 feet. A 5-inch liner will be run and a blank section will be cemented through perforations opposite the wet interval. This well is a semi-wildcat test at the southeast edge of the central area, Rosecrans field.

Eastern Oil Company's Eastern 1, wildcat well east of Playa del Rey field, 15 miles west of Los Angeles, has developed a bad place in the 7-inch casing at 6707 feet. An attempt will be made to force cement away at that point, following which the hole will be cleaned out for further production tests. Superior Oil Company has recently relinquished its interests in the well and responsibility for operations has reverted to the original operator. Depth is 7563 feet, with 7-inch casing cemented at 7295 feet and 4¾-inch liner landed on bottom and cemented through perforations at 7425 feet. Top of the nodular shale was cored at 7268 feet, top of the oil sand was cored at 7398 feet, and the well was bottomed in gray sand before encountering the schist. It is understood Superior will commence operations soon on the Chase lease, located about 1500 feet southeast of Eastern 1.

Near the west end of the East Coyote field, West American Oil Company's West American 1 is standing cemented with 8⅝-inch water string set at 3575 feet. The well was cored to 6432 feet, but the oil showings below 5500 feet did not warrant a test and the hole was plugged back to 5535 feet for a test of upper zones.

At the extreme east edge of the East Coyote field Continental Oil Company is removing derrick from the recently completed DeAugustine-Abrams-Daly Oil Company's Barnett 1 to the new location for Continental Oil Company's Carlton Community 2, about 500 feet to the east.

West American Oil Company's Del Amo 1, wildcat at the southeast end of Dominguez Hill, 5 miles north of Long Beach, failed to develop production and preparations are being made to deepen. Depth is 9000 feet, with 5¾-inch oil string landed at 9000 feet and cemented through perforations at 8495 feet.

CALIFORNIA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTEBELLO—		
Standard, Baldwin 82	90	9334
REDONDO—		
Franz-Nelson Pet. Co. No. 1	450	4823
Mullins Oil Corp., Shuster 1	*	700
KETTLEMAN HILLS—		
Kettleman No. Dome No. 74-30J	715	7813
EDISON—		
A. T. Jergins Trust, Texas Fee		
23-7A	175	2994
23-29A	100	2139
FRUITVALE—		
Western Gulf, Lahore 2	400	3902
Sawyer, Reed 2	325	3502
MIDWAY-SUNSET—		
St. Helens Pet. Co., Schultz 2-B	140	3674
Wood-Callahan Oil Co., Mullaney 1	155	5185
ROUND MOUNTAIN—		
Shell, Olcese-One 6	1060	1976
VENTURA AVENUE—		
Associated, Lloyd 23	195	6100
KERN COUNTY—		
Ohio Oil, K.C.L. D-1	*	9003
I.T.I. 1	*	5507
SAN LUIS OBISPO COUNTY—		
Avila Oil Co., Gibson 1	*	4249
MOUNT POSO—		
Shell, Security 16	270	1775

*Failures; †Junked; ¶Million cu. ft. gas.

BEREA MAKES GAS
Plan more testing for oil in Arenac County

WEEKLY STAFF REPORT

Mt. Pleasant, Mich.—First commercial gas production in Berea sand in Michigan was developed this week when McClanahan Oil Company's Buffalo Land Company 1, SE NE NW Section 10-20n-4e, Arenac County, logged gas from 1126 to 1133 feet with a completed side-nipple gauge of 5,108,000 cubic feet. Berea sand was logged at 1092 feet.

Operators planned to tube and complete, although the wildcat test originally was slated for a Traverse and Dundee lime oil test. Fact that 8-inch casing was set at 856 feet would have made it necessary to pull and ream for a seat below the Berea gas pay. Operators regarded this as too dangerous an undertaking. Besides, a market for the gas may be available for fuel to other drilling tests in the district and possibly to the nearby resort town of Standish.

Michigan's principal producing dry gas horizon has been the eroded Marshall, now commonly referred to as Michigan Stray.

Officials of McClanahan Oil Company said a deal was being negotiated with a number of major and independent acreage holders to start a second test for Traverse and Dundee immediately.

T. F. Caldwell Inc.'s Mutch 1, wildcat, Section 17-19n-4e, Arenac County, was completing in Dundee lime this week. Berea sand was topped at 1465 feet with gas from 1494-1500 feet; Traverse at 1956 feet with oil and gas at 1965-70 feet, and Dundee lime at 2765 feet with a rainbow and light gas show at 2835 feet.

Dragoon Development Company was testing Sylvania lime this week after a 200-quart nitro shot at 3349 feet and about 200 feet of oil and fluid in the hole after the shot on Young 1, Section 15-17n-15w, a Mason County wildcat test. Sylvania Oil Company's Campbell 1, Section 10-17n-15w, another Mason wildcat, resumed drilling at 3285 feet for a Sylvania lime test.

Fifteen completions in Michigan for the week brought abandonments on 7 tests, 5 of which were wildcats. Failure of F. V. McCollister's Joass 1, Section 8-15n-10w, Mecosta County, to show in Dundee lime brought major disappointment, after logging upper beds comparatively high.

Lee Brown's Spicer 1, Section 6-2s-8e, drilled to 4562 feet, a Wayne County wildcat, is being abandoned after an extended test. An attempt to bring the well into commercial production with a nitro shot failed. Other wildcat tests reported failures included H. L. McEboy's Glander 1, Section 18-14n-3e, Bay County, drilled into Dundee water at 3778 feet; H. E. Bell's Vinton 1, Section 27-14n-2w, Midland County, a test

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midway between Greendale and Yost-Jasper pools, went into Dundee black water at 3475 feet. Three Stray sand gas tests, Fletcher & Leyman's Stuckey 2, Section 29-12n-5w, Montcalm County, was a failure at 1329 feet; Hall Be Oyle's Peterson 1 and Rennie Schuberg, both Section 33-15n-9w, Mecosta County, north extension tests of Austin gas pool, were quit as gas sand failures.

Successful completions included 6 Dundee oil producers with a combined initial of 693 barrels and 2 gas wells with a total open flow of 40 million feet.

Grand Rapids Gas Suits

The Michigan Public Utilities Commission in a cross bill filed in Ingham circuit court has asked an injunction restraining Grand Rapids Gas Light Company from servicing its customers with 100 percent natural gas. This motion along with Grand Rapids Gas Light Company and the City of Grand Rapid's petitions for court orders to prevent the commission from enforcing its 50-50 mixed gas decree, are scheduled for hearing on August 31.

L. K. Chamberlin, manager of Grand Rapids Gas Light Company three weeks ago announced bringing suit against the commission and the company's intention to service Grand Rapids with 100 percent gas in defiance of the original 50-50 order.

In limiting Grand Rapids to 50-50 gas (about 3 million feet daily on present market requirements) the commission cited the United States Bureau of Miners survey report and its own engineer's reports as evidence that the Tri-township field gas reserves did not warrant 100 percent withdrawal. Consumers Power Company is servicing the Lansing area from the Tri-township field and part of the Saginaw Valley district on a 100 percent program.

MICHIGAN

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BAY COUNTY—		
H. L. McEvoy, Glander 1, sw se ne sec 18-14n-3e	*	3778
MECOSTA COUNTY—		
F. V. McCollister, Joass 1, se ne se, sec 8-15n-10w	*	3497
Gordon Oil Co., Hoffman 1, c sw ne, sec 31-13n-7w	¶14	1332
Hall Be Oyle Co., Peterson 1, c se se, sec 33-15n-9w	*	1380
Schuberg 1, c sw se, sec 33-15n-9w	*	1332
MIDLAND COUNTY—		
Pure Oil Co., Balch 4, n½ se sw, sec 2-13n-2w	30	3448
Clark 1, s½ sw sw, sec 6-13n-1w	75	3428
H. E. Bell, Vinton 1, s sw se, sec 27-14n-2w	*	3475
MONTCALM COUNTY—		
Daily Crude Oil Co., Christesen 7, nw ne ne, sec 10-12n-6w	220	3126
Dougherty & Markey, Fisher 4, ne sw sw, sec 36-11n-5w	110	3199
Snyder Drilling Co., Mangus 1, ne se sw, sec 36-11n-5w	98	3200
Fletcher & Leyman, Stuckey 1, c ne sw, sec 29-12n-5w	*	1329
Mutual Oil & Gas Co., Morse 3, c sw ne, sec 2-12n-7w	¶26	1290
OGEMAW COUNTY—		
Wiser Oil Co., Horne 3, sw se ne, sec 19-22n-2e	160	2724
WAYNE COUNTY—		
Lee Brown, Spicer 1, sw sw sw, sec 6-2s-8e	*	4562

*Failures; †Junked; ¶Million cu. ft. gas.

EASTERN FIELDS

WEEKLY STAFF REPORT

Completions

OHIO

Company, Well and Location	Init. Prod. Bbls.	Depth
ATHENS COUNTY—		
Ohio Fuel Gas, C. D. Henry 4	¶	1520
ASHLAND COUNTY—		
Dill & McFrederick, Rodgers 1	¶	3482
GUERNSEY COUNTY—		
George Jewell & Co., Mitchell 1	*	1120
Ohio Fuel Gas, Lawrence 2	*	3522
HOCKING COUNTY—		
Preston Oil, S. C. C. & Co. 138	*	3650
HOLMES COUNTY—		
Ohio Fuel Gas, Heffelfinger 4	¶	2833
Strouse 1	¶	3381
MONROE COUNTY—		
Howard Hall & Co., Schmidt 1	1	1622
NOBLE COUNTY—		
Price & Brown, F. Prinko 3	*	226
Metcalf Robinson & Co., Springer 6	1	942
PERRY COUNTY—		
Thistle Oil Co., Drake 24	10	....
Marshall & Co., Newberry 13	*	....
Preston Oil Co., Gilmore 2	*	....
Haney Hollingsworth, Edward Hug 2	*	....
Norman Jarboo 3	*	832
W. P. Cress 3	*	....
LICKING COUNTY—		
G. H. Long, Johnson 61	5	....
E. H. Everette, Nethers 2	*	....
Gale Early, Wilson 1	3	....
Alexander Bank Co., Hirst 4	2	....
MEDINA COUNTY—		
Ohio Fuel Gas, Reutter 1	5	....
Curtis & Eaken, Brown 15	2	....
LAWRENCE COUNTY—		
Murphy Oil Co., Stewart Bros. 1	*	....
STARK COUNTY—		
East Ohio Gas Co., John Beese 2	¶	4106
T. & J. Sorrick 1	¶	4257
TUSCARAWAS COUNTY—		
W. C. & F. R. Graff, Obermiller Shanum 1	*	4345
MUSKINGUM COUNTY—		
Wilber Swingle, Ernest Epply 1	¶	1278

Company, Well and Location	Init. Prod. Bbls.	Depth
WEST VIRGINIA		
RITCHIE COUNTY—		
King Knob Oil, Andrews 4	3	....
Chalmers Oil & Gas, McGinnis 17	*	....
Carnegie Natural Gas, Riggs 3	3	....
ROANE COUNTY—		
South Penn Oil, McVey 2	20	....
Bogges & Co., A. D. Harper 1	*	....
L. C. Young & Co., W. R. Harper 1	*	....
WIRT COUNTY—		
W. C. Patterson, Hale 28	*	....
WETZEL COUNTY—		
Santee Oil & Gas Co., Snodgrass 6	5	....
TYLER COUNTY—		
American Oil Dev. Co., Pierpoint 1	2	....
CABELL COUNTY—		
Shale Gas Co., Hatfield 1	¶	....
Adkins & Co., Salt Rock School 1	¶	....
CALHOUN COUNTY—		
Southeastern Gas, Hosey 1	*	....
Rosdale Oil & Gas, Stockwell 1	¶	....
CLAY COUNTY—		
South Penn Oil, Stockley 109	4	....
KANAWHA COUNTY—		
G. L. Cabot, Lewis 1	¶	....
N. Tompkins 2	¶	....
LINCOLN COUNTY—		
Maebon & Co., Spurlock 1	¶	....
MONONGALIA COUNTY—		
Carnegie Nat. Gas, Brand 1	¶	....
INDIANA		
KNOX COUNTY—		
O. A. Thayer, Myrlia Cowles 3	*	821
Parker & Loyd, Maud Wolf 2	¶	....
DAVIESS COUNTY—		
A. T. Spaulding, Sadie Beck 4	¶	....
Loogoott Fuel Light, Geo. F. O'Brien 3	*	468
Oliphant & Sage Co., Lester Price 2	*	780
GIBSON COUNTY—		
Mid-West Ver Corp., Orvis Hutchinson 1	¶	1480
KENTUCKY		
HENDERSON COUNTY—		
Maddin Oil Corp., E. Jones 1	5	....
Ranger Oil Co., C. M. Gish 9	*	....
Imperial Gas Products, S. A. Freeman 1	25	....
The Ohio Oil Co., G. B. McManama 9	7	....
Sunflower Oil & Gas Co., Leeman Townlot 1	20	....
McLEAN COUNTY—		
Randolph & Co., A. Bates 1	250	....
James C. Ellis, H. Thornberry 1	85	....

*Failures; †Junked; ¶Million cu. ft. gas.

Williams Brothers Corp.

General Contractors

Oil · Gas · Gasoline · Water · Pipe Lines

CHICAGO · TULSA · HOUSTON

THE OIL WEEKLY REPORT ON IMPORTANT

Wildcat Tests

ALABAMA

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 2, se nw sw 9-3n-29e, elev 191 ft, sd for heavier rig 4002 ft.

MOBILE COUNTY—J. C. Prine's King 1, 4-1n-4w, pb to perf and test 2500-2550 ft old td 3186 ft. Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, lcn.

ARKANSAS

BRADLEY COUNTY—Phillips Pet.'s Murphy Land Co. 1 nw nw 12-17-11, top Permian lime 4900 ft, test sw with drops of asphalt 4900-4960, elev 91, dr 5617 ft.

COLUMBIA COUNTY—Eastern Texas Prod. Co.'s Kendrick 1, nw se 8-19-18w, woc 315 ft.

CLEVELAND COUNTY—Diffi et al's L. C. Ross 1, sw ne 1-11-11 wocs 100 ft. R. L. Saxon's L. C. Tipton 1, sw ne 13-11-12 dk. J. R. Lockhart's Robertson 1, se se 36-10-11 dk.

DALLAS COUNTY — McCall and Kelly's Owens 1, nw sw 26-10-16 owdd, cmt 4½-in csg 1445 ft td 1485 ft.

HEMPSTEAD COUNTY—H. D. Easton et al's Conway-Tiller 2, sw sw 34-12s-27w, woc 150 ft. Buffalo Oil Co.'s Lafferty 2, 17-14-24, sd 2437 ft.

LITTLE RIVER COUNTY—M. E. Sanderson's Penning 1, ne sw, woc 10-in csg 148 ft.

LONOKE COUNTY—J. F. Russell's Gunter 1, se se 17-5-10, dk.

MILLER COUNTY—Joiner et al's Montana Realty Co. 1, nw nw 3-17-29 elev 225 ft sd 3280 ft. McClanahan et al's Miller Lbr Co. 1 sw sw 2-18-28 15½-in csg 250 ft, top Nacatosh 1432 ft, dr 3398 ft. Montana Lbr. Co. 1, sw sw 2-20-27, rig up, sd.

NEVADA COUNTY — Benedum & Trees' Groves 1, sw sw 10-14-20, rur.

OUACHITA COUNTY—O. F. Whittaker's Howard 1, 29-12-16, sd 2580 ft. J. F. Ferris' G. Dean 1, ne se nw 16-5-17, owdd td 2997 ft. Phillips Pet. Co.'s Arnold 1, ne sw 27-15-15, 7-in csg 5335 ft, dr 5396 ft.

PULASKI COUNTY—G. I. Kieselman's Fee 1, 2-1-13, 10-in csg 100 ft, td 265 ft.

CALIFORNIA

FRESNO COUNTY

CANTUA CREEK—Mohawk Pet. Co.'s Langer 1, 30-16-15, lcn. Western Gulf Oil Co.'s S.P.L. Co. 3, 3-17-15, dr shale 8184 ft.

KERN COUNTY

MOUNTAIN VIEW—Associated's Di Giorgio 2, 3-31-29, bldg rig. Mohawk Pet. Co.'s Earl Fruit 1, td 6015 ft, pumping 180 bbls 36 gravity oil; clean; Earl Fruit 2, 10-31-29, lcn. Shell's Greer 1, 15-31-29, dr shale and sand 2440 ft.

LOST HILLS—Associated's Fee 1, 1-26-20, rur; Williamson 2, 2-26-20, td 1143 ft, pumping 220 bbls net, 13.4 gravity oil, 12 percent sand; Williamson 3, 2-26-20, spud 8/14, dr. Standard's United 1, 2-26-20, td 6887 ft, fsh.

SO. MARICOPA—E. A. Bender's Robinson 1, 14-10-23, sd 840 ft.

POSO CREEK—C. C. M. Oil Co.'s Mon 3, 26-27-28, lcn. McAdams Oil Co.'s No. 1, 32-27-28, td 1883 ft, plug 1880 ft, pumping 30 bbls net.

JASMINE—Cochran Oil Co.'s Bishop 1, 31-25-27, dr gray sand 4825 ft. Doyle Pet. Co.'s Quinn 1, 15-25-27, td 2970 ft, wocs 8⅝ in at 2910 ft.

DEVIL'S DEN—Den Pet. Co.'s Bates 1, 20-25-19, td 752 ft, running 12½ in.

EAST EDISON—East Edison Oil Co.'s Tejon 1, 22-30-30, lcn.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so&g—*show oil and gas.*
fsg—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

PETTY

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OFFICE AND LABORATORY:
317 SIXTH STREET - - - - P. O. DRAWER 1477
SAN ANTONIO, TEXAS

ELK HILLS—Elk Hills Pet. Co.'s No. 1, 14-31-24, dr hard shale 5890 ft.

ARVIN—General Pet. Corp.'s Arvin 1, 26-31-29, dr shale and sand 5410 ft.

DOMINION — Modoc Pet. Co.'s Vedder-Bowles 2, 21-26-28, td 1537 ft, bailing 60 bbls.

STRAND—Ohio Oils' K.C.L. D-1, 1-30-25, abn 9003 ft.

GRAPEVINE—Ohio Oils' T I T 1, 36-11-19, abn 5507 ft. 101 Oil Co.'s Tejon 1, 5-10-19, rig. Reserve Oil & Gas Co.'s Ritchie 33-2, 33-11-19, td 4505 ft, plug 4474 ft, 8⅝ in at 4445 ft, to swab; Tejon 2-6, 2-10-19, rur.

NO. BELRIDGE—Rio Grande Oil Co.'s Layman 1, 18-28-20, td 2410 ft, fsh.

COMANCHE POINT — Tejon Ridge Oil Co.'s Tejon 1, 23-32-29, sd 2519 ft.

SO. BELRIDGE—Temblor Ranch Oil Co.'s No. 1, 24-28-20, td 933 ft, co.

SAN EMIDIO—Texas Co.'s K.C.L. C-11-49, 11-11-22, dr shale 8705 ft.

MISCELLANEOUS

ALAMEDA COUNTY—Seaboard Oil Corp.'s Johnson 1, 13-3-3, dr hard sand 2212 ft.

HUMBOLDT COUNTY—Texas Co.'s Eureka 2, 22-3-1, td 4428 ft, dr out cement.

KINGS COUNTY—Associated's Avenal 1, 35-23-17, dr hard shale 2177 ft. Herndall & Associates' Spreckles 1, 16-24-18, td 4201 ft, plug 1985 ft, pumping oil and water to sump.

MADERA COUNTY—Pure Oil Co.'s Chowchilla 3, 12-10-13, td 2973 ft, deepening.

MERCED COUNTY—San Joaquin Oil Co.'s San Joaquin 1, 1-12-11, dr shale 4672 ft.

SAN BENITO COUNTY — Associated's Murphy Ranch 1, 5-12-4, dr shale and sandy shale 3706 ft.

SAN JOAQUIN COUNTY — Standard's Weyl-Zuckerman 1, 25-2-4, td 5273 ft, running liner.

SOLANA COUNTY — Amerada Pet. Co.'s Hoppe 1, 22-4-2, dr grayish blue shale 4631 ft. Standard's Anderson 6-1, 34-4-2, td 4545 ft, plug 4514 ft, wocs 7 in at 4514 ft; Neil Anderson 1, 27-4-2, rig.

TEHAMA COUNTY — Northern Cos. Pet. Ewers-Mooney 1, 25-24-3, sd 8260 ft.

TULARE COUNTY—J. W. Alford's Williams 1, 28-16-23, rig. W. H. Fortine's Mosesian 1, 22-27-26, sd 3120 ft. Milheim Oil Corp.'s No. 1, 7-23-23, rur. Trico Oil & Gas Co.'s Calif. Western 1, 7-23-23, dr shale 810 ft; Callison 1, 27-21-25, rig.

MONTEREY COUNTY—Shell's Branch 1, 34-24-10, sd 8994 ft; Branch 2, rig.

SAN LUIS OBISPO COUNTY

ARROYO GRANDE—Avila Oil Co.'s Gibson 1, 10-31-13, abn 4249 ft. Birch-Royer Oil Co.'s Patchell 1, 33-31-13, dr 2040 ft. Blue Ridge Oil Co.'s Carpenter 1, 5-32-13, grade. Crail Bros.' Bedder 1, 8-32-13, sd 3215 ft. A. T. Jergins Trusts' Roderiguez 1, 5-32-13, sd 3654 ft; Roderiguez 2, foundation. Pismo Pet. Co.'s Scott 2, 5-32-13, rig.

CARRIZO PLAINS — Barnsdall-Foster Oil Co.'s Wreden 1, 24-28-17, dr sand and shale 5110 ft.

PANORAMA HILLS—United Oil Co.'s No. 1, 2-31-21, sd 1490 ft.

SANTA BARBARA COUNTY

COAL OIL POINT—Bankline Oil Co.'s No. 2, permit 191, td 4708 ft, plug 3250 ft, standing.

LOMPOC—O. C. Fields' Santa Rita 1, 11-7-33, td 2008 ft, wocs 8⅝ in at 1931 ft.

BETTERAVIA—E. H. Moore's Union Sugar A-1, 25-10-35, td 6330 ft, fsh.

LOMPOC AREA — Top Row Oil Co.'s Spanne 1, td 325 ft, fsh.

VENTURA COUNTY

PIRU—Associated's Wiley Canyon 1, 6-3-18, surveying roads.

SO. MOUNTAIN—Geo. L. Duty's No. 1, 13-3-21, rur. Honolulu Oil Corp.'s Hobson 1, 23-3-21, dr oil sand 3325 ft.

BARDSDALE—El Rancho Oil Co.'s Elkins 1, 9-3-19, sd 5050 ft. Petroleum Securities Co.'s Elkins 1, 7-3-19, td 5627 ft, to be abn; Home Ranch 1, 3-3-19, td 4515 ft, wocs 9 in on bottom, to perforate and test by stages.

SATICOY—Texas Co.'s Lloyd-Butler 1, spud 8/16, dr.

SHIELLS CANYON—Texas Co.'s Shiells 130, td 4242 ft, formation tester showed salt water at 3580 ft, to make further tests; Shiells 131, td 3355 ft, formation tester showed for 64 bbls, 35.5 gravity oil and 193,000 ft gas.

OXNARD AREA—Vaca Oil Explor. Co.'s Calif Lands 1, 6-1-21, td 2311 ft, wocs 8⅝ in at 1865 ft.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, td 9360 ft, recovered fish, r.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall's Rancho S. F. 1, 26-4-17, dr hard shale 690 ft. Holbrook Pet. Corp.'s Newhall L&F Co. 1, 26-4-16, dr hard shell 2590 ft. Yant Pet. Corp.'s Yant 5, 1-3-6, td 2410 ft, testing cement.

ARTESIA—M. T. Bernstein's Millard 1, 25-3-12, dr sand and shale 5241 ft.

GARDENA—Crude Oil Dr. Co.'s No. 1,

31-3-13, dr sandy shale 1608 ft. West American's Dominguez 1, 6-4-13, dr 2990 ft.

TORRANCE—McDowell Oil Co.'s Com. 1, 35-3-14, dr hard shell 5991 ft.

PALOS VERDES — Pamaco Royalty Co.'s Burkhard 1, 2-5-14, rigged and idle.

ROSECRANS—Republic Pet. Co.'s Trust 1, 18-3-13, td 6141 ft, plug 6125 ft, trying to shut off water.

ASCOT SPEEDWAY—Republic Pet. Co.'s Jordan 1, 24-1-13, lcn.

EL NIDO—Shell's Lloyd-Dabney 1, 33-3-14, sd 6262 ft.

LAWNDALE—Signal Finance Corp.'s Woods 1, 10-3-14, dr shale 7350 ft.

EAST SANTA FE—Vanda Pet. Corp.'s Loftus Land 1, 4-3-11, dr shale 6464 ft.

DOMINGUEZ — West American Oil Co.'s Del Amo 1, 3-4-13, td 9000 ft, plug 8900 ft, to deepen.

ORANGE COUNTY — Calif. Eastern Oil Co.'s Verde 1, 35-3-9, td 4750 ft, fsh. Hillman & Long's Westminster 1, 14-5-11, dr gray barren sand 8790 ft. Shell's Anaheim Sugar 3-1, 7-6-10, sd 3518 ft.

SAN BERNARDINO COUNTY—Equitable Pet. Explor. Co.'s No. 1, 11-10-5, dr sticky blue shale 2670 ft. Chino Pet. Corp.'s Abacherle 2, 12-3-8, dr shale streaks sand 1840 ft. Tehama Pet. Co.'s Kraemer-Baker 2, 33-2-9, dr hard shale 520 ft; Pellisier 1, 4-3-8, dr hard shale 1040 ft.

FLORIDA

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 2, se se 17-24s-25e, elev 120 ft arr test so&sg 5002 ft.

NASSAU COUNTY—St. Mary's River Oil Corp.'s Bank of Hilliard 1, 19-4n-24e no report.

POLK COUNTY—Edward A. Hill, Trustee Polk County Lbr. Co. 1, nw nw nw 32-25s-25e, elev 90, dk.

KANSAS

BARBER COUNTY — Sinclair Prairie Oil Co.'s Gentry 1, ne ne ne 1-33s-15w, dr 3842 ft.

BARTON COUNTY—Brouk et al's Keil 1, se se ne 11-16s-15w, testing. Rose & Lant's Redetzke 1, ne nw nw 10-16s-11w, dr 2845 ft. Yernell & Carlson's Rath 1, ne ne ne 35-18s-12w, sd 200 ft. John Burton et al's Wendel 1, ne ne ne 13-19s-11w, woc 555 ft. C. L. Price's Deutsch 1, nw nw ne 16-16s-13w, dr 1365 ft. F. E. Bailey et al's Hammeke 1, nw ne sw 12-18s-12w, dr 235 ft.

BUTLER COUNTY—Dalton et al's Miley 1, csw ne 17-27s-5e, sd 350 ft. W. P. Hildebrande et al's Farab 1, sw sw se 5-29s-6e, cel. Ed Solomon's Church 1, sw ne se 8-28s-5e, dr 100 ft.

CHASE COUNTY—Propp et al's Fromm 1, se se se 29-18s-9e, dr 265 ft.

CLARK COUNTY — Olson & Watchorn's Morrison 1, cse sw 17-32s-21w, dr cement.

COWLEY COUNTY—Morton et al's Rogers 1, se se ne 1-31s-4e, td 2984 ft, D&A.

EDWARDS COUNTY—Stanolind & Elwell's Donovan 1, cse se 14-25s-18w, dr 4750 ft. Royal Pet. Co. et al's Krupp 1, nw nw se 18-24s-19w, mim.

ELLIS COUNTY—Rosespring et al's Union Pacific 1, ne ne ne 9-13s-20w, sd 3798 ft. Jones & Shelbourne's Gunther 1, se se sw 9-11s-19w, ur 8-in csg 3295 ft. Bradley Oil et al's Penny Wann 1, se se se 13-15s-20w, fsg 3452 ft. Empire's Samuelson 1, ne ne sw 31-11s-16w, flowing at 2491 ft. Bridgeport Mach.'s Ubert 1, ne ne nw 12-13s-18w, ur 6-in cas 2885 ft. Philham Oil Co.'s Gerstner 1, sw sw se 24-14s-17w, ur 6-in csg 3445 ft. Trigg et al's Armbrister 1, se se sw 6-11s-19w, dr 2975 ft. Lario O&G Co.'s Cress 1, ne ne ne 13-11s-17w, woc 346 ft. Champlin et al's Hadley 1, se sw ne 30-11s-17w, dr 1157 ft. Lario O&G Co.'s Marshall 1, nw se ne 36-11s-18w, cor 1371 ft. Frank Hamilton et al's Sack 1, nw nw se 26-13s-19w, dr 2778 ft. Twin Drlg. et al's Schmidt 1, sw sw ne 22-15s-17w, dr 3569 ft. Murphy Oil Co.'s Weisner 1, se se sw 12-14s-19w, loc. Ted Kerr et al's Koblitz 1, se sw nw 23-12-18w, ru. Wolf Creek et al's Polifka 1, sw sw ne 24-13s-18w, dr 1665 ft. Glick & McMorrow's Staah 1, sw sw se 6-13s-17w, cel. Simar Oil Co.'s Leiker 1, nw nw se 12-15s-18w, dr 410 ft.

GRAHAM COUNTY — Nook & Young's Hills 1, nw se se 19-10s-21w, dr 740 ft.

GRANT COUNTY—Columbian Fuel Co.'s Gray 1, cse 3-29s-35w, dr 575 ft.

GREENWOOD COUNTY—Guy Scott et al's Pedroja 1, se ne se 6-26s-10e, ur 8-in csg 1630 ft.

HARVEY COUNTY—Harburney Oil Co.'s Scragg 1, nw nw se 24-22s-3w, ur 6-in csg 3110 ft.

HASKELL COUNTY—Helmerich & Payne et al's Jones 1, cse 34-26s-34w, dr 2610 ft. Kuhn Bros. et al's Nilson 1, sw sw se 21-28s-32w, dr 2710 ft.

KINGMAN COUNTY — McBride's Wooldridge 1-A, sw ne se 16-27s-7w, dr 3150 ft.

LINCOLN COUNTY—Graham et al's Smiley 1, ne nw nw 26-10n-9w, rr.

LYON COUNTY—Becker Bros.' Rossillion 1, se sw ne 19-21s-11e, dr 2155 ft.

MARION COUNTY — Empire Oil Co.'s Schmidt 1, nw nw se 31-20s-2e, dr 2032 ft. Barbara Oil Co.'s Hane 1, ne ne sw 4-18s-5e, dr 2140 ft.

McPHERSON COUNTY—Hawkins et al's Ritikofer 1, ne ne se 2-20s-1w, set 10-in csg 2225 ft. Skiles et al's Nuse 1, ne ne sw 18-18s-4w, cel.

NESS COUNTY—Newton Dev. Co.'s Tenny 1, nw nw se 19-18s-25w, set 15-in csg 530 ft, sd. Continental's Thompson 1, ce½ e½ sw 13-18s-26w, testing. Sayre Oil Co.'s Ryersee 1, cne se 34-18s-21w, mim.

PAWNEE COUNTY—Kessler & Their et al's Gustafson 1, sw sw sw 27-20s-16w, cor 3555-73, sw. Simpson Oil et al's Gates 1, sw sw sw 13-20s-16w, dr 3215 ft.

PRATT COUNTY—H. V. Elwell et al's Fay 1, nw nw se 15-27s-14w, mim. I.T.I.O. and Olson's Bolt 1, cnw ne 5-29s-11w, dr 980 ft.

RENO COUNTY—Miller et al's Detter 1, ne se nw 28-22s-7w, dr 2849 ft. Pryor & Lockhart et al's Kerr 1, cnw 23-23s-8w, dr 2283 ft. Foraker et al's Hiett 1, se sw ne 34-24s-4w, set 6-in csg 3332 ft, co. Continental and Wentz's Snook 1, ne nw sw 10-22s-8w, pb 2976 ft, woc. Graham et al's Miller 1, ne ne se 36-25s-10w, running 7-in csg. Clyde Pulse et al's Payne 1, sw nw ne 4-22s-7w, mim. L. R. Page et al's Mueller 1, cs¼ sw ne 25-24s-5w, rot rig.

RICE COUNTY—Saco et al's Haxton Est 1, nw nw ne 30-19s-8w, dr 2060 ft. Sage et al's Patton 1, sw sw sw 5-21s-7w, dr 2665 ft. Shell Pet. Corp.'s Gordon 1, cw½ w½ ne 21-21s-10w, td 3445 ft, D&A. Shell's Maughlin 1, 11-20s-8w, prep to dd. W. S. Field et al's Crawford 1, se se sw 21-19s-6w, dr 3155 ft. Allison & Fitzwilliams et al's Foby 1, nw sw nw 17-19s-7w, ru. Jno Stark et al's Doran 1, ne ne ne 29-20s-8w, spd. Buckley's Bailey 1, sw sw nw 19-20s-6w, bldg rig. Charles Pet. Co.'s Speck 1, nw nw se 29-20s-8w, rot rig.

ROOKS COUNTY—Lester & Dean's Burtt 1, se se ne 29-10s-2w, dr 3327 ft. Helmerich & Payne's Bedard 1, cne 29-9s-19w, td 3688 ft, D & A. L. C. D. Drlg. Co.'s Westhusin 1, cne se 11-19s-17w, sd 2420 ft. Hartman & Blair et al's Hall 1, nw nw nw 25-10s-17w, dr 3495 ft. J. A. Shoemake's Stebbins 1, ne ne sw 26-7s-17w, ur 6-in csg 3515 ft.

RUSH COUNTY—Skeeles et al's Grumbein

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UNITED GAS SYSTEM

HOUSTON, TEXAS

1, sw sw ne 7-16s-20w, cel. Ralph Wixton et al's Gorham Est 1, nw nw sw 35-15s-16w, ru.

RUSSELL COUNTY—Hartman & Blair's Johnson 1, nw nw nw 11-13s-14w, dr 2884 ft. Coralena Oil Co.'s L. A. Sellens 1, nw nw nw 17-15s-13w, dr 450 ft. Armer et al's Maier 1, ne ne nw 20-15s-14w, co 2525 ft. Equity Gas Co.'s Harbauk 1, nw ne se 19-13s-12w, ru. El Dorado Ref. Co.'s Scott 1, nw nw ne 17-13s-13w, co. Braden & McClure's Herbel 1, ne ne nw 35-14s-14w, dr 1025 ft.

SALINE COUNTY—Ryan Consolidated & Archer's Norton 1, ne ne ne 30-14s-2w, dr 2843 ft. James Brouk et al's Otherlander 1, ne nw se 10-16s-13w, fsg 1445 ft.

SEDGWICK COUNTY—Wakefield et al's Howard 1, se se ne 25-25s-2e, set 6-in csg 2762 ft, co. Lauck's McLean 1, csw se 1-27s-1w, dr 3264 ft. R. J. Wallace et al's Sheer 1, sw sw sw 22-27s-3w, woc 185 ft.

STAFFORD COUNTY—Lebow et al's Wolf 1, se sw nw 3-21s-12w, fsg 2335 ft. I.T.I.O. Co.'s Mellies 1, cn½ n½ ne 6-22s-11w, dr 2215 ft. Stanolind O&G Co.'s Evans 1, nw nw sw 3-23s-11w, dr 1732 ft. Skelly Oil Co.'s Kipp 1, se se ne 27-25s-14w, cel.

SUMNER COUNTY—Matthews & Derrington's Berry 1, nw nw se 14-25s-1e, dr by 3745 ft. Wilson et al's Clark 1, csl nw 15-35s-1w, td 4545 ft, D & A. The Texas Co.'s Reed 1, ne se se 11-31s-1w, dr 3814 ft. Pryor & Lockhart's McCowen 1, ne ne sw 18-32s-1w, dr 2930 ft. Orcott & Stewart's Newton 1, se se se 21-30s-2e, ru to dd. Rosespring Drlg. Co.'s Rutter 1-A, cnw nw 21-33s-2e, spd. Tom Palmer et al's Hull 1, nw ne sw 9-32s-1w, dr 1290 ft.

TREGO COUNTY — Central Commercial's Wagg 1, nw nw se 17-13s-21w, swabbing. Hall et al's Deines 1, se se se 12-13s-24w, hfw 3940 ft, co. G. M. Pigott et al's Burkett 1, csw 15-11s-22w, dr 2797 ft. McNeely et al's John Lemke 1, nw nw sw 7-11s-22w, rust. York State Oil Corp.'s Gugler 1, sw sw sw 36-12s-21w, dr 2155 ft.

WOODSON COUNTY—Lewis et al's Riggs 1, sw sw sw 10-26s-14e, fsg 1250 ft.

SOUTH LOUISIANA

ACADIA PARISH—H. E. Dalton's Setting 1, Trilby prospect, 17-9s-1w, fsh 150 ft.

ALLEN PARISH — Humble's Bel 2, Bel prospect, 28-6s-7w, dr shale 9408 ft.

CALCASIEU PARISH—General Crude Purchasing Co.'s Buhler 1, Buhler prospect, 30-8s-9w, ru. Union Sulphur's Wurmnest 1, South Lake Charles prospect, 9-11s-8w, dr shale 8468 ft.

CAMERON PARISH—Magnolia's Johnson Bayou School Land 1, Johnson Bayou prospect, 16-15s-14w, ru. Pure's State Mallard Bay 1, Mallard Bay prospect, 22-13s-3w, woc 85 ft.

EAST BATON ROUGE PARISH—Cavalier Oil Co.'s Vignes 1, ne of Nettie, 40-8s-2e, dr shale 3630 ft.

IBERIA PARISH—Texas Co.'s State Fausse Point 2, Fausse Point, 35-11s-8e, fsh 4961 ft; same operator's State Vermilion Bay 1-B, in Vermilion Bay, 16s-5e, dr shale 6538 ft.

JEFFERSON DAVIS PARISH — Shell's Sturdevant 1, South Roanoke prospect, 25-10s-4w, ru. Stanolind's Calcasieu National Bank 1, South Jennings prospect, 15-10s-3w, running 9⅝-in csg to 8900 ft.

ST. MARY PARISH—Mike Hogg's Lawes Realty Company 1, near Charenton, 30-13s-10e, making drill stem test 6802 ft.

ST. MARTIN PARISH—Texas Co.'s Lake Mongouloi 2, Lake Mongouloi prospect, 14-10s-9e, dr shale 7742 ft.

TERREBONNE PARISH—Humble's Continental Fur 1, Bayou Terrebonne prospect, 30-17s-14e, dr shale 9878 ft.

VERMILION PARISH—Continental's Hebert 1, Abbeville prospect, 20-12s-3e, dr shale 11,100 ft. Stanolind's Fred Stovall 1, Intra-Coastal prospect, 89-14s-3e, ru.

NORTH LOUISIANA

BIENVILLE PARISH—Bowles et al's Bank of Ringgold 1, ne ne 3-15n-9w, rur; DeSoto O&G Co.'s Dunn & Olson 1, n½ nw 15-16n-10w, spd; J. W. Leonard et al's Courtney 1, se ne 5-17n-7w, elev 215 ft, top red beds 3600 ft, top anhydrite 4845 ft, top massive anhydrite 2096 ft, sr to bottom 5856 ft; McDowell et al (formerly H. E. Rondeau) Locke 1, ne nw ne 9-15n-9w, dk.

BOSSIER PARISH—Humphrey et al's Bulkley 1, 35-21n-13w, dr 1700 ft. Bailey Dr. Co.'s (formerly Bowman & Tidwell), Nattin 1, 15-22n-14w, sd 2975 ft. Triangle Dr. Co.'s Skannal E-1 c s½ 23-17n-12w, dr 5570 lime and shale; United Gas Public Service Co.'s Skannal E-1 26-17n-12w, 16-inch csg, 315 ft dr 2518 ft.

CADDO PARISH—Gulf Oil Corp.'s Hatcher 1, se se 11-17n-15w, elev 269 ft, 16-in csg 150 ft, top chalk 1465 ft, cmt 10-in csg 2589 ft, dr lime strks anhydrite 4815 ft, Prairie River Synd.'s (J. E. Smitherman et al) Hutchinson 1, sw nw, 15-15n-12w, elev 152 ft, anhydrite 3984-4475 ft, coring for top Travis Peak 5750 ft. Shreveport Oil Corp.'s Muslow 1, 5-20n-15w, dry on drill stem test 4820, sd for water, Fallon Oil Co.'s Cupples 1, 24-16n-13w, sd for csg 4001 ft.

CALDWELL PARISH—Critchett & Wood's Fee 1, ne sw ne 18-11n-3e, dr 1100 ft.

CLAIBORNE PARISH—E. T. Oakes et al's Patton Est. 2, ne ne 1-20n-5w, elev 357 ft, coring 4531 ft shale and lime; Sugar Creek Synd.'s Darrett 2, se sw 31-20n-5w, lubricating stuck drill stem at 6200 ft, td 8616 ft. Martin & Langford White 1, se se 26-21n-8w, 10-in csg, 60 ft, sd 512 ft.

DE SOTO PARISH — J. E. Carlson et al's Garland 1, se nw 7-14n-14w, sd 2010 ft. Payne et al's Harris 1, 11-13n-14w, fsg 2200 ft. R. Kamon Rascoe Est. 1, se nw, rur; Union Pet. Co.'s Rascoe 3, nw se 3-10n-13w, sd 3052, est 100 bbls daily, wosr.

FRANKLIN PARISH—S. C. Jensen's Bailey 1, se ne 12-11n-6e sd 1875 ft.

JACKSON PARISH — Zoigen et al's La. Cent. Lbr. Co. 5, ne nw 13-14n-2w, owdd, 1770 ft.

MOREHOUSE PARISH — Henry E. Rondeau, E. M. Clarke 1, ne se 10-20n-7e, elev 90 ft, dr 3755 ft.

NATCHITOCHES PARISH—C. D. Morrison et al's Moffett 1, se se 19-10n-10w, woc 220 ft. Union Pet. Co.'s De Blieux 2, 83-10n-7w, sd 2545 ft, chalk, I. J. Allen's Simpson 1, 12-7n-7w, dk.

RED RIVER PARISH—Conley et al's Long-Bell 1, ne ne 19-13n-9w, installed heavier rig, arr deepen, td 3200 ft.

RICHLAND PARISH—Gulf Oil Corp.'s R. R. Rhymes 15, nw se se 32-17n-6e, elev 77 ft, top anhydrite 2935 ft, dr lime 5314 ft.

UNION PARISH—Federal Pet. Co.'s Series B. U. No. 3014, 34-21n-3e, dr 6063 ft. Federal Pet. Co.'s E. V. Series No. 3013, sd 4110 ft.

WEBSTER PARISH—W. D. Ambrose et al's Chrichton 1, se nw 36-18n-9w 16-in csg 25 ft, 10-in cst 3030 ft, coring 5550 ft. J. P. Evan's T. H. Johnson 1, se nw sw 36-18n-9w, cemented 7-in csg 5785, td 5788 ft. Red Hawk Oil Co.'s Baker 1, se nw 9-22n-9w, sd 200 ft. Skidmore et al's Barnette 1, nw sw 29-17n-9w, sd 1050 ft. Ohio Oil Co.'s R. L. Holloway 6, Section 3-21-10n, flowed 272 bbls in 12 hrs, 50.4 gravity oil, pb 5556 csg perf 5550-56 ft estimated 5,000,000 cubic ft gas, .1 wash water, old td 8565 ft. Ohio Oil Co.'s Bodcaw Lbr. Co. 1, C ne se 28-21-10, lcn, Ohio Oil Co.'s R. M. Coyle 1, c ne se 22-21-10, lcn.

MISSISSIPPI

BOLIVAR COUNTY—White & Ballou 1, ne 18-24n-7w, arr make drill stem test, td 1680 ft.

CLAIBORNE COUNTY—Claiborne County Dev. Co.'s Ruth D. Hayden 1, 56-11n-2e, lcn. Claiborne O&G Co.'s Crawford 1, 6-13n-4e, sd 1150 ft.

GRENADA COUNTY—H. T. Slater et al's Carpenter 1, nw se 5-21n-7e, elev 344 ft, dk & mir.

HINDS COUNTY—Chichester et al's Gervin 1, nw 12-5n-1w, dk.

JONES COUNTY — Snok-Black Pet. Co.'s Fox 2, 31-7n-12w, sd 4212 ft.

LAMAR COUNTY—Sun Oil Co.'s Scanland & Semmes 1, sw ne 28-4n-15w, mim.

SIMPSON COUNTY—Goodwill O&G Co.'s Berry 1, 33-2n-4e, dk.

WILKINSON COUNTY—T. S. Stoneman et al's L. T. Ventress 1, 38-2n-3w, dk.

YALABOUSHA COUNTY—G. M. Langston et al's W. C. Bryant 1, ne sw 21-24n-6e, dk & mir.

MONTANA

CARBON COUNTY—Round Butte Oil and Gas Co. 2, w ne se 3-6s-23e, dr 290 ft.

CASCADE COUNTY — C. Leonard Smith, Hines 1, se sw se 14-22n-2e, dr 180 ft. The 10 in csg set at 135 ft.

FERGUS COUNTY—Emmons et al 3, se ne ne 6-21n-18e, dr 296 ft. Judith Operating Co., Government 2, w nw ne 35-22n-17e, dr 2475 ft.

GLACIER COUNTY—Stanley Gray and L. P. Jackson, Dunbar 1, nw se nw 22-34n-17w, co 375 ft.

JUDITH BASIN COUNTY—Fletcher P. Hunt, Hobson 3, nw se ne 10-14n-15e, dr 1188 ft.

PETROLEUM COUNTY—H. Clark Rowland et al's Kalispell 1, ne ne se 35-14n-25e, dr 194 ft.

SHERIDAN COUNTY — Cheyenne Oil & Gas Co., Olson 1, ne ne 15-35n-53e, dr 1448 ft.

TOOLE COUNTY—Boyd Kyle Wolsti 1, cse se 2-33n-1w, running 6 in.

YELLOWSTONE COUNTY—R. C. Tarrant's Mosher 1, w sw ne 26-3w-24e, sd 1000 ft with est 3,000,000 c ft gas daily and 500 ft oil std in hole.

MICHIGAN

ALLEGAN COUNTY—Russell Sapp's Hudson 1, 29-2n-13w, dr 800 ft.

ALPENA COUNTY—C. W. Teater's Nevins 1, 18-32n-6e, dr 4460 ft. L. V. Hemp's Potter 1, 36-32n-6e, sd 170 ft.

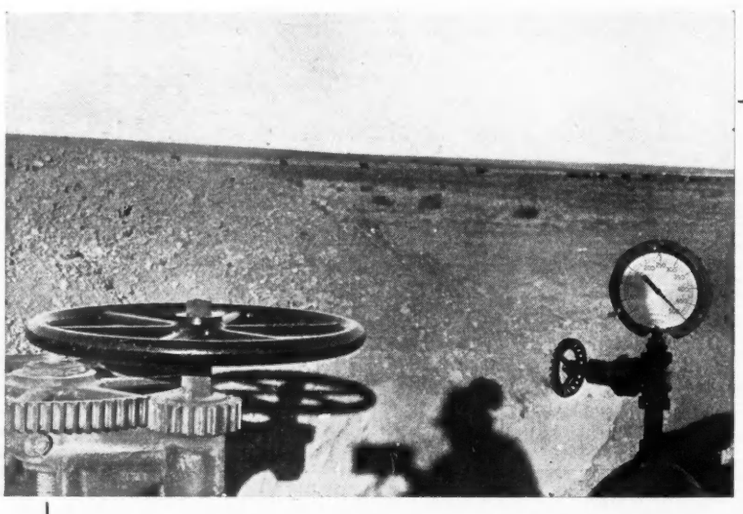
ARENAC COUNTY—Tamblyn and Martindale's Buffalo Land Co. 1, 7-19n-3e, fsh 2250 ft. McClanahan Oil Co.'s Buffalo Land Co. 1, 10-20n-4e, Berea 1092 ft, gas 1126-33 ft, gauged 5,108,000 ft, tubing. T. F. Caldwell, Inc.'s Mutch 1, 17-19n-4e, Berea 1465 ft, sg 1494-1500 ft, Traverse 1956 ft, so 1966 ft, Dundee 2766 ft, dr 2861 ft.

CHIPPEWA COUNTY — F. D. Barton's Krettan 1, 17-41n-7e, fsh 880 ft.

CLARE COUNTY—A. Hansen's Fee 1, 26-17n-5w, dr 3050 ft.

CLINTON COUNTY—St. Louis Pipe & Supply Co.'s Harris 1, 14-7n-2w, rig. Petroleum Exploration Co.'s Schneeberger 1, nw w½ ne, 11-5n-2w, rig. H. E. Bell's Arthur 1, 29-6n-1w, dr 1705 ft.

GLADWIN COUNTY — C. L. Maguire,



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L. D. 6 **El Dorado, Kansas**

Inc.'s Haven 1, 25-18n-1w, dr 300 ft. Gordon Oil Co.'s Havens 1, ne sw nw, 36-18n-1w, lcn. Olympia Oil & Gas Co.'s Barnes 1, 22-20n-1w, wo 6-in cas 1280 ft.

GRATIOT COUNTY—Red Man Oil Co.'s Duckworth 1, 9-11n-3w, sp. Ed Swearer's Alexander 1, 8-12n-2w, sp. McPherson Co.'s State Bank 1, 11-9n-1w, dr 1800 ft. R. L. Stoddard's Soule 1, 9-11n-2w, dr 3000 ft. Max Pray's Witting 1, 23-11n-1w, dr 750 ft.

INGHAM COUNTY—Petroleum Exploration Co.'s Burgess 1, 12-3n-1w, dr 600 ft. National Mineral Co.'s Smith 1, 9-4n-1w, sd 600 ft.

IONIA COUNTY—Terry Dale, Inc.'s Tew 1, 12-6n-7w, sd 4350 ft. James H. Barton's Mosser 1, 19-6n-5w, dr 350 ft.

ISABELLA COUNTY—H. E. Bell's Nilson 1, 16-13n-3w, dr 1700 ft. Pure Oil Co.'s Embrey 1, 34-15n-6w, 10-in csg col 232 ft, 428 ft td. Robbins & Hance's Myer 1, 24-14n-4w, rust.

KENT COUNTY—J. H. Hansen Synd.'s Garbow 1, nw ne ne, 3-10n-9w, lcn. Michigan Oil Exploration Co.'s Croff 1, 35-7n-9w, dr 5055 ft.

LAPEER COUNTY—Smith Petroleum Co.'s Vaskowitz 1, 10-9n-9e, dr 1230 ft.

MACKINAC COUNTY — Van Kuren and Montigel, Tr.'s Hiawatha 1, 17-44n-9w, dr 690 ft.

MACOMB COUNTY—H. H. Brown's Stepnitz 1, Private Claim 546, 2n-13e, sd 350 ft.

MASON COUNTY — Sylvania Oil Co.'s Campbell 1, 10-17n-15w, Sylvania 3285 ft, dr 3305 ft. Dragoon Development Co.'s Young 1, 15-17n-15w, shot, testing so 3349 ft. Northern Development's Burke 1, 26-17n-15w, sd 2640 ft.

MECOSTA COUNTY — Taggart Brothers' Waters 1, 28-16n-8w, fsh 1717 ft. W. J. Berner's Fitzgerald 1, 9-13n-9w, to re-acidize, swab and pump 2 to 4 bbls oil and water, Dundee 3474 ft, td 3674 ft. Hall Be Oyle Co.'s Sears 1, 9-13n-8w, dr 3497 ft Bell shale.

MISSAUKEE COUNTY — M. J. Ingold's Donley 1, 31-22n-8w, sd 1160 ft.

MUSKEGON COUNTY—Muskegon Development Co.'s Doll 1, 8-9n-14w, 400,000 ft gas, Berea 1190 ft, td 1212 ft.

OSCEOLA COUNTY — M. Bliss Keeler's Beall 1, 24-18n-9w, rig.

OTSEGO COUNTY—Harley William's Hanson & Raae 1, 15-30n-1w, dr 880 ft.

SAGINAW COUNTY—Lewis Burr's Palmer 1, 19-10n-6e, csg 6-in 1120 ft. W. R. Borrough's Fortney 1, 29-11n-4e, dr 1200 ft.

TUSCOLA COUNTY — Co-Op Oil Co.'s Forsyth 1, 36-10n-7e, Dundee 2390 ft, dr 2485 ft.

NEW MEXICO

LEA COUNTY—Argo Royalty Co.'s B. T. Lanehart 1, sw se ne 21-25s-37e, elev 3071 ft, cem cas, td 1246 ft. C. & G. Oil Co.-The Texas Co.'s Ellen Weir 1, c ne ne 14-20s-37e, elev 3564 ft, top anhydrite 1348 ft, flowed 20 bbls oil and 175 bbls water, td 4075 ft, running cas to shutoff upper water. Barney Cockburn & Rowan-Nichols Oil Co.'s H. G. Mattern 1, c sw se 7-22s-37e, elev 3426 ft, used 2000 gals acid at 3727 ft, dd to 3746 ft, flows 5 bbls fluid daily via cas, testing. Conoco & California Co.'s E. M. Elliott 1-A-15, se se se 15-22s-37e, rig; Elliott 1-A-21, c se se 21-22s-37e, elev 3338 ft, dr 2700 ft. Culberson, Erwin & Stovall's J. S. Eaves 1, c sw nw 18-21s-33e, elev 3893 ft, top anhydrite 1660 ft, salt series 1795-3375 ft, no water, dry and abd in hard lime 3813 ft. Emperor Oil Co.'s State 1, c sw sw 5-21s-35e, elev 3652 ft, sd 635 ft. Gulf Oil Corp.'s L. M. Buffington 1, c nw sw 13-25s-37e, elev 3091 ft, coring 3420 ft; S. J. Carr 1, c nw sw 3-24s-37e, elev 3267 ft, pb fr sul w at 3886 ft to 3625 ft, shot 290 qts nitro at 3521-3600 ft, testing; F. C. King 1, c sw nw 5-23s-37e, elev 3371 ft, td 3788 ft, shot 250 qts nitro 3696-3783 ft, shows sw, treating with 2000 gals acid. Jal Nat'l Gas Co.'s C. T. Bates-Humble 1, c nw sw 20-25s-37e, elev 3049 ft, 5,000,000 ft gas at 2737 ft, fsh 2740 ft. Magnolia's E. O. Carson 2, c nw nw 33-21s-37e, elev 3471 ft, dr 1950 ft; John Scharbauer-Eidson 1, c nw se 29-16s-35e elev 4014 ft, dr anhydrite 3685 ft. Ohio Oil Co.'s Anna Walden 1, ce ne ne 21-22s-37e, elev 3364 ft, dr 2430 ft. Oil Well Drl. Co.-The Texas Co.'s L. L. Clardy 1, c se se 13-16s-36e, elev 3859 ft, top anhydrite 2092 ft, top salt 2355 ft, tested dry at 4800 ft, dr 4810 ft. N. G. Penrose & Rowan-Nichols Oil Co.'s Will Cary-Humble 3, c se nw 22-22s-37e, elev 3364 ft, sd 1150 ft; Cary-Humble 4, c sw nw 22-22s-37e, elev 3365 ft, td 3600 ft, shot 150 qts nitro 3465-3587 ft, completed flowing 116 bbls initial via tubing, then caught fire. Plains Prod. Co.'s J. A. E. Knight-Humble 1, c ne se 21-24s-37e, elev 3221 ft, cem cas in brown lime 3367 ft; Knight-Humble 2, c ne sw 14-24s-37e, lcn; John Williams-Humble 1, c sw ne 34-24s-37e, elev 3191 ft, show oil and gas 3420-23 ft, dr sandy-shale 3435 ft. Repollo Oil Co.'s J. M. Brownlee 1, ne ne se sw 25-21s-36e, elev 3557 ft, swabbing and testing saturated lime, td 3868 ft. Republic Prod. Co.'s R. S. Crosby 2, nw nw sw 28-25s-37e, elev 3024 ft, dr 2050 ft. Samedan Oil Corp.'s S. B. Hughes 1, c ne sw 4-23s-37e, elev 3321 ft, dr 1250 ft; Marshall 1, c sw nw 12-21s-36e, elev 3540 ft, td 3861 ft, sd to pump. Skelly Oil Co.'s Ellen Sims 1, c nw se 3-22s-37e, elev 3300 ft, completed flowing 750 bbls natural at 3520-3594 ft; Ellen Sims 1-A, c sw se 3-22s-37e, elev 3300 ft, cem 7-in cas 3400 ft, sd to rust; F. S. Stuart 1, c ne nw 15-25s-37e, elev 3107 ft, shot 130 qts nitro 3364-3416 ft, co at 2650 ft. Stanolind O&G Co.'s P. J. Langley 1, c se nw 15-25s-37e, lcn. W. H. Street et al's Wood-Humble 1, near c se ne 22-22s-37e, cem cas 250 ft. Sun Oil Co.'s B. T. Lanehart 1, c se se 20-25s-37e, elev 3042 ft, top anhydrite 971 ft, salt 1145-2510 ft, top lime 2520 ft, pb fr 2790 to 2422 ft, sidetracked junk, dr 3250 ft. The Texas Co.'s E. D. Fanning 1, c se ne 4-24s-37e, elev 3293 ft, pb fr sul w at 3701 ft to 3565 ft, shot 300 qts at 3543-3634 ft, co and testing.

OKLAHOMA

ATOKA COUNTY—Prairie Investment Co.'s Cobb 1, sw ne nw 19-3s-11e, sd 710 ft. Phelps & Coat et al's Fidelity Life Ins. Co. 1, se sw nw 23-1s-12e, sd 750 ft. Malarnee et al's Ranch 2-A, cse se 35-2s-13e, fsg 4210 ft.

BECKHAM COUNTY—Jo-Gail Drlg. Co.'s Gilliland 1, cne ne 3-8s-26w, dr 2480 ft.

CADDO COUNTY — Wasteka Oil Co.'s Griffin 1, sw se ne 27-6n-10w, dr 6270 ft.

CARTER COUNTY—Carter Oil Co. et al's Leon Voorhees 1, cse sw 34-5s-2w, dr 8205 ft. John W. Hammond et al's Lile 1, sw se se 8-5s-1e, sd 553 ft. The Texas Co.'s Cathey 1-B, se ne ne 6-5s-1w, dr 4396 ft.

COAL COUNTY—Shell Pet. Corp.'s Hill 3, se se nw 30-3n-10e, td 6457 ft, D&A. Sinclair Prairie Oil Co.'s Culver 1, ne ne sw 16-1n-8e, dr 4290 ft. Mitchell's Quiett 1, ne nw sw 35-1n-8e, sd 1900 ft. Carter & Magnolia's James 1, sw nw sw 35-1s-8e, pb 3180 to acidize. Continental's King 1, ne sw ne 26-1n-8e, td 3779 ft, sd. Continental's Kirby 1, sw se sw 23-1n-8e, td 370 ft, sd. Carter's Warne 1, ne ne nw 31-3n-9e, rur and sd. Continental's Breedlove 1, nw sw sw 24-1n-8e, td 346 ft, sd. Shell Pet. Corp.'s Hill 4-A, cnw nw 30-3n-10e, loc.

COMANCHE COUNTY — William Davis' Aetna Life Ins. Co. 1, se ne ne 22-2n-15w, td 160 ft, sd.

GARVIN COUNTY—Luttrell et al's Howell 1, nw se nw 34-1n-1e, dr plugs. Chas. E. Carter et al's Wood 1, nw sw se 5-4n-3e, pump 143 bbls oil and 60 bbls water, 24 hours, comp. B. F. Lundy's G. C. Prince 1, ne ne se 32-1n-2w, td 2550 ft, sd.

GRADY COUNTY—Art Holt et al's Ramsey 1, ne se ne 31-5n-8w, rig. Graham et al's Castleberry 1, sw se nw 8-5n-7w, sd 580 ft. Ray Stevens Mays 1, ne ne ne 31-5n-8w, dr 2910 ft.

HUGHES COUNTY — Phillips Pet. Co.'s Eberle 1, ne ne sw 12-5n-9e, td 5744 ft, D&A. Sivil et al's Montgomery 1, nw sw nw 7-9n-9e, sd 3498 ft. T. P. McAdams & Barnes, Inc.'s Koch 1, sw ne ne 1-9n-10e, dr 2650 ft. Burke-Greis' Dunson 1-A, se nw nw 3-9n-8e, fsg 1500 ft. Southern Oil Co.'s Buck 1, se ne sw 21-8n-10e, rust. Blackwell O&G Co.'s Vargee 1, se ne nw 29-9n-9e, dr 3089 ft.

JACKSON COUNTY—Burnham's Oliver 1, nw nw se 26-1n-20w, dr 2264 ft. Jackman's Fee 1-A, sw sw sw 27-1s-24w, rur.

JEFFERSON COUNTY — Red River Oil Co.'s Trout 1, se ne ne 6-8s-7w, fsg 2212 ft. Pearson et al's Douthitt 1, ne ne ne 24-6s-9w, sd for drill pipe.

JOHNSTON COUNTY—Patton et al's McCrummens 1, sw sw ne 16-1s-6e, td 260 ft, sd.

KAY COUNTY—The Texas Co. et al's Fulton 1, se se se 18-27n-4e, ur 8-in cas 2090 ft. Denver P. & R.'s School 1, se nw ne 13-26n-1w, dr 3113 ft. Robert Wilson et al's Dickerson 1, ne ne sw 20-29n-1w, dr 1655 ft.

KIOWA COUNTY—Beeler & Klein's Parrish 1, se se nw 3-6n-15w, sd 290 ft. Westbrook & Likeing's Aetna Life 1, ne se se 10-5n-16w, sd 495 ft. Travis & Scott's Doyle 1, ne se sw 21-5n-17w, dr 760 ft.

LeFLORE COUNTY—McGraw et al's Tidwell 1, cnw se 17-3n-22e, td 1900 ft, sd.

LINCOLN COUNTY—Amerada et al's Zimmerman 1, sw sw ne 10-12n-5e, testing. Skelly's Sporn 1, nw ne sw 21-17n-3e, td 4550 ft, woc and rust. Kemp & Continental's Lobaus 1, nw sw nw 21-17n-5e, rig.

LOGAN COUNTY—Helmerich & Payne's Hassler 1, nw nw se 14-16n-4w, rig.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, shut in for orders. Riddle et al's Johnson 1, csw se 20-8s-2w, td 3510 ft, co to deepen.

MARSHALL COUNTY — Helmerich & Payne's Taliaferro 1, nw se sw 26-5s-5e, dr 4499 ft. Tom Allen's Johnson 1, nw nw se 14-5s-5e, td 830 ft, D&A.

McCURTAIN COUNTY — Louis Sykes' Mitchell 1, cnw sw 12-9s-26e, td 2487 ft, sd.

McINTOSH COUNTY—Deickman's McIntosh 1, se se se 4-12n-17e, td 1270 ft, sd. Stanolind & Ramsey's Tiger 1, nw nw sw 13-9n-15e, sd. Phillips Pet. Co.'s 1, ne ne nw 3-9n-13e, td 4193 ft, D&A.

MURRAY COUNTY—Power Oil Co.'s Lancaster Trust Co. 1, csw ne 10-1s-2e, rur.

NOBLE COUNTY—Stanolind & Amerada's Gillham 1, ne se se 14-22n-1e, sd, wih.

OKFUSKEE COUNTY — Champlin Ref. Co.'s Thompson 1-A, sw sw nw 7-13n-8e, td 4100 ft, 750 ft wih, sd.

OSAGE COUNTY—Gray & Tolson's 1, sw sw ne 33-25n-7e, td 3066 ft, D&A. Stoner & Miller's 1, nw ne sw 18-22n-8e, td 2997 ft, co to bail. Norbla Oil Co.'s 1, ne ne ne 13-22n-6e, rig. Chavalier & Simon's 1, se se se 24-23n-9e, sd.

PITTSBURG COUNTY — Oklahoma Dist. Oil Co.'s Beeler 1, ne ne sw 7-7n-14e, fsg 2825 ft. Pendleton & Vaughn's R. E. Hobb 1, cse nw sw 7-6n-16w, pb 425 ft to test. Jones, Stein & Gilbreth's Kelsey 1, nw nw ne 7-6n-16w, td 648 ft, sd.

SEMINOLE COUNTY — Tom Phillips & Kimraw Drlg. Co.'s Chemperney 1, se se nw

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PLANT: Wallisville Road and H. B. & T. Tracks

HOUSTON, TEXAS

7-6n-7e, td 2264 ft, dry. Tilley et al's Wilson 1, se sw sw 29-7n-6e, td 4723½ ft, D&A. Rudco O&G Co.'s Butner 1-A, ne ne sw 15-9n-8e, td 1863 ft, woc. Kennedy's Bowlegs 1, nw nw se 3-8n-7e, loc. Vierson, Hayes, Reynolds Drlg. Co.'s Carolina 1-A, se sw ne 4-6n-7e, td 1980 ft, sd.

STEPHENS COUNTY—Endicott et al's McFatridge 1, nw nw sw 11-3s-19w, sd 1515 ft. Ed Parson's Olson 1, csw sw 21-2n-8w, rig. The Texas Co.'s Bohanan 1, ne nw nw 15-3s-15w, mach. T. M. McCasland, Hildebrand 1, sw se ne 1-3s-7w, dr 3655 ft.

TEXAS COUNTY — Allison & Barnhill's Bingley 1, sw sw ne 30-2n-18e cm, sd 355 ft.

TILLMAN COUNTY — Gulf Oil Corp.'s Wearmouth 1, se nw se 31-1s-18w, pb 4557 ft to test. Johnson, Young & Mitchell's Donahoe 1, se nw nw 7-4s-17w, sd 3200 ft. Bernheim's Tate 1, ne ne nw 16-1s-19w, dr 2791 ft. Smith's Hammill 1-A, ne nw nw 6-5s-15w, sd 2425 ft. Eugene Skinner's Lynn Oliver 1, se se nw 22-1s-15w, sd 1000 ft.

SOUTH TEXAS

ATASCOSA COUNTY—Atascosa Trust's R. A. Doumch 1, 152-ac tr, blk 10, J. T. Russell sur No. 1222, 3 mi n Poteet, set 7 in cas 3460 ft, top chalk 3503 ft, td 4008 ft, pb to 3500 ft, will acidize. Helvetia Oil Co.'s 1 Susie Pratt, 176-ac tr, J. de la Garza sur No. 46, 1 mi nw Anchorage, sand and sandy shale 2249-2300 ft, set 7 in cas 2245 ft, swabbed abt 3 bpd 44 grav oil, td 3116 ft, pb to 3000 ft, set 800 ft of 4½ in liner, swabbed dry through tubg. W. B. Hinton's G. F. Weigand 1, Donavan sur 145, 14 mi e Cambellton, td 910 ft, ds stuck.

BASTROP COUNTY—America Pet. Exploration Co.'s Martha Freytag 1-A, ru. Paul C. Teas' Clement Vinklarck 1, 100-ac tr, S. Millet League, 10 mi s Smith Villa, dr 680 ft.

BEE COUNTY—W. V. Bowles' C. Mengers, Sr. 1, W. Allen sur, 100-ac tr, 4½ mi w of Skidmore, dk. Lonnie Glasscock's J. B. Ablinger 1, 109.65-ac tr, John Ryan sur, 4 mi se Beeville, sd 304 ft. Illinois Pet. Corp.'s M. M. McKinney 1, 350-ac lse, L. C. Randolph sur, 3 mi se of Pettus, coring 3160 ft. H. A. Pressey's R. T. Hicks 1, 1120-ac tr, Jose M. Uranga gr, ab 568, 4½ mi s of Normana, td 3568 ft, broken sand, shale and shells 3482-3568 ft, show dry gas, set and cemented cas on btm perf 3482-85 ft, showed for gasser on prod test through cas, comp 20 bpd, 3/16 in ch, tp 250 lbs, cp 475 lbs.

BEXAR COUNTY—Algra Oil Co.'s Edward C. Peters 1, sur 5, sec 4, Miguel Gotari sur, 13 mi se San Antonio, td 435 ft, Navarro clay, running 8 in cas. American Gas Co.'s Oliver 5, 400-ac tr, M. F. Rodriguez sur, dr 3196 ft, lime. Carter & Ingersoll's Louis Mann 1, 83.5-ac tr, Stephen Jett sur 53, 3 mi s Von Ormy, set 6⅝ in cas, dr ahead 1355 ft lie. Delaware Dev. Co.'s E. H. Fredrick 2, 380.4 ac tr, Rodriguez sur, ru prep sp. Dr. Lachelle's (O. M. Owensby et al) Minna Goreth 1, 284.04 ac tr, Adam Stafford sur No. 49, owdd, otd 1091 ft, co to dd. Raymond Pulliam's E. J. Lamb 1, 617-ac tr, Francisco Farias sur 15, 4 mi fr Elmendorf, dr 1150 ft. F. M. Shaver's A. W. Bitter 2, Jose Baerrera sur No. 48, 2 mi nw Von Ormy, top chalk 1171 ft, td 1324 ft, pb to 521 ft, showing for 3 bbl well, pull and rerun rods and new cups. Dr. L. Skaggs' P. A. Chapman, Jr. 1, 125-ac tr, A. J. Leslie sur, No. 99, 10 mi s San Antonio, td 1020 ft, set 6⅝ in cas at 997 ft, rig broken down, moved off, temp abd. W. R. Swearingen et al's Franz Woefler 1, 70-ac tr Jose de la Garza sur, ¾ mi ne Elmendorf, ru for 1500-ft test. Thorman's A. L. Salm 1, 330-ac tr, Peter N. Hays sur No. 3, top lime 1792 ft, fsh 2050 ft, pulled ds in two. R. P. Whitfield's Col. Hohn Sweeny 1, CH&SA RR sur, 11 mi sw San Antonio, td 806 ft, sand and shale 784-804 ft, 6⅝ in cas at 800 ft, sd. Woodward & Hardie's R. W. Devilbiss 1, John Devilbiss sur, 1 mi s Thelma, sd 2280 ft, set cas abt 2800 ft, ds stuck, loosened ds, co hole and working on rig.

BLANCO COUNTY — E. L. Nixon's H. Hohenberger 1, J. McClendon sur 94, 320 ac tr, 3 mi se Blanco, sp.

BROOKS COUNTY—The California Co.'s E. Garcia 1, tr No. 3 Las Mestinas de Gonzaline gr, Alta Mesa dist, td 8022 ft, pb and perf 3020-28½ ft, well made water with scum of oil, cemented perf, reperf 3024-28½ ft, jetting abt 60 bbls day, some water, shut in.

CALDWELL COUNTY—Barnet Pet. Corp.'s N. L. Strawn 1, 210-ac tr, Pablo Martinez sur, ¾ mi w of Lytton Springs townsite, set 6⅝ in cas 1690 ft, coring ahead 1790 ft, dry serp, will make small pumper. H. B. Starkey's (J. J. Elam et al), Francis-Brown-Cochran 1, W. F. Young sur, 3 mi e Luling, sand with show of oil and gas 1742-47 ft, set 5 3/16-in cas on packer, completing when bailer blown out of hole, pulling cas to dd, milling out junk pipe. Terminal Oil Prod. Co. et al's A. P. Doyle 1, 250 ft wl, 1500 ft s cor of 100-ac tr, Andrew Churchill sur, 8 mi sw Lockhart, coring 1710 ft, in ch; Rosanky 1-A, 50 ft w No. 1, 964-ac tr, J. S. Montgomery sur, sd 140 ft.

CALHOUN COUNTY—Hiawatha Oil Co.'s John Roemer 1, J. J. Ogsberry sur, 9 mi s Port Lavaca, coring 65 ft. Blanco Oil Co. & Al Buchanan's P. H. Welder, D. L. Palmer sur, 1 mi ne Heyser disc well, coring 5682 ft, no rept. Continental Oil Co.'s Austin 1, sec 12, blk "H" Pedro Garcia sur, 1 mi n of other heaving shale wells, Seadrift prospect, sec 11, ¾ in cas at 6598 ft, td 8825 ft, ds stuck at 8521 ft, set cas to btm, will test sands 8714-22 ft, had sw flow, cement off sw flow, ran 2½ in tubg to 8521 ft, washed, swabbed down to 8400 ft, cutting out 6 in cas, pb, td 825 ft. Humble O&R and Plymouth Co.'s E. H. Welder 2, 1¼ mi sw Heyser disc well, Jose Maria Rios sur, dst 5454-75 ft, rec 35 lbs pres, 90 ft mud, comp 100 bbls day, ¼ inch, too high oil/gas ratio, pulled tubg and reworked, dr ahead 6050 ft, comp 125 bpd, ¼ in ch, pb, td 5482 ft. P. H. Welder B-1, 3000 ft nw disc, Agaton Cisneros sur, oil sand 5500-04 ft, dst rec 720 ft oil, 26 lbs pres, 15 min, set cas, comp 164 bpd, 5/16 in ch, cp 750 lbs, 60 150 lbs; P. H. Welder B-3, 466 ft sw RR, 1399 ft nw of sel of Agaton Sisneros sur, td 445 ft, sand.

DUVAL COUNTY—Frank Buttram's N. L. & L. Co. 1, 1335 ft nl, 1700 ft el of sur 102, 5 mi nw Eagle Hill, dr below sur csg. Cole Pet. Co.'s W. R. Peters 1, sur 795, ½ mi e of n end of Lopez field, sw sand 2194-98 ft, small oil show, sw sand 2202-06 ft, sd 2575 ft; W. R. Peters 2, 330 ft nl and el of sur 795, 1 mi e Lopez field, lcn. Frank J. Gravis' Gravis et al 2, sur 250, 10 mi sw San Diego, sd for water 1500 ft. Tom Graham's S. Sutherland 1, 170-ac tr, sur 188, 14 mi s of Freer, sand 2342-47 ft, sand 2459-65 ft, td 3309 ft, set 5 in cas 2500 ft, will pb and perf 2459-65 ft, wocs. Frank J. Gravis' Schallert 1-A, sec 555, Palagana salt dome, oil show in sand 2730-44 ft, dst 2730-44 ft, rec 500 ft oil, 300 lbs pres, 2½ min, set 7 in cas top sand. Chas. T. Kleiner's T. E. Chernoskey 1, n 30-ac tr of se 60-ac sur 226, ¾ mi nw Westheimer & Daube No. 2, sand 2693-2707 ft, set 7 in cas 2707 ft, perf cas in Loma Novia, sand with 20 shots, perf with 50 more shots, no shows, sd, woc. Wm. D. Masten et al's D. Ruiz 2, sur 128, west of Hoffman field, sand 2587-2608 ft, set cas, tested sw, recementing. Mid-Continent Pet. Corp.'s W. K. Peters 1, nw ¼ sur 159, dr 1773 ft, top Cole 1755 ft. Pan American Prod. Co.'s J. F. Welder heirs 1-H, 160-ac lse in sur 103, one mi sw of Loma Vista, showed gas on dst of upper Loma Novia sand, dr to 3006 ft, pb to 2866 ft, set 7 in cas 2822 ft, bad cement job, cement cas for 4th time, swab dry through cas, sd, woc in pbh at 2863 ft. Rio Bravo Dr. Co.'s W. R. Peters 2-A, sec 29, 2000 ft nw California Gruy 1, sand 1820-45 ft, 6⅝ in cas 1820 ft, comp making est 12 mcf gas, spray of oil 300 lbs pres. Rogers & Rogers' Valdez 1, 80-ac lse, Mesquite gr, dr 250 ft. Shell Pet. Corp.'s J. M. Taylor 1, nw/4 sur 214, 3 mi sw Seven Sisters field, coring 2341 ft. Smith & Hamill's Juan Benavides 2, on common cor of blks 15, 16, 22 and 23, subd 3, El Mesquite gr, 3 mi e of Cole field, sd 3000 ft. Shell Pet. Corp.'s J. F. Welder heirs 1-B, 79.3-ac lse in sur 69, 1¼ mi n Loma Vista field, 3 attempts at dst in sandy shale 2863-74 ft failed, td 3242 ft in shaley gray water sand, run electric formation test, washing to btm, will set cas at abt 2900 ft. E. R. Thomas et al's Atlee Parr 3, 12.59-ac tr, sur 26, sand 4002-10 ft, set cas on btm, perf, swabbed dry, dr ahead 4100 ft.

EDWARDS COUNTY—M. R. Phillips Turney 1, sec 164, Wyatt sur, dr 500 ft, lime, Plateau O&G Co.'s Mrs. R. L. Hatch 1, J. W. May sur, sec 66, HE&WT RR sur, comp. water well, prep sp.

FRIO COUNTY—Amerada Pet. Corp.'s C. A. Miller 1, 394.3-ac tr in B. Saltello sur, No. 323, Pearsall, set 7 in cas 5431 ft, top Austin chalk 5421 ft, sd 5721 ft.

GOLIAD COUNTY—The California Co.'s Langrebe 1, 100-ac tr in John Hancock sur, 8 mi n Goliad, dr 2190 ft. Zeni Oil Co.'s M. Lutenbacher 3, sw ¼ of blk 25, Goliad Town sur, 2 mi s Goliad, dst 4150-60 ft, slight gas flow, top Pettus 5356 ft, core recovered, btm 6 inches showed sandy shale, attempted to blow out, set 7 in cas 5352 ft, cemented with 560 sacks, dr plugs, blew out again, killed, cored ahead to 5639 ft, lost hole sdtr, set liner to 5584 ft, sand 5592-99 ft, pulling screen, believed to have sanded up.

GONZALES COUNTY—M. S. Holliday et al's T. G. Edwards 1, blk "A", Holliday subd, W. W. Peace 1/3re League, 3 mi sw Cheapsides, lcn. Tull et al's Boska 1, 61.2-ac tr, B. McClure sur, sd 2200 ft, drop.

GUADALUPE COUNTY—Pat Armstrong's M. Tiller 1, 10-ac tr, J. G. King sur, 2 mi ne Kingsburg, dr 660 ft. Clark & Weinert's W. O. K. Anderson, td 2517 ft, set cemented 6⅝ in cas 1839 ft, set 680 ft 4 in perf liner, pulled tubg, rerun liner, swabbing. T. H. Coulter's August Engelke 1, 54.8-ac tr, Green DeWitt sur, 3 mi sw South Darst Creek, td 3204 ft, td in Georgetown, set 6⅝ in cas at 2700 ft, top ch 2920 ft, top Eagleford 5081 ft, top Buda 3122 ft, top Del Rio 3184 ft, top Georgetown 3200 (?) ft, ran new packer, sd. F. H. Gallagher's Katie Lay 1, on 20-ac lse, J. K. Davis sur, 800 ft e Stagal & Ramone crevice wells, ru. Long & Ross' Ed. Feliz 1, 1½ mi s fr New Berlin 75-ac, V. Duran sur, sp and set 8 in cas 20 ft, changing to rotary. Riddle Oil Co.'s E. Nolte et al, J. Sowell sur, 6 mi e Seguin, 6⅝ in cas 1780 ft, td 1845 ft, ch, swabbed down to 1400 ft, small oil show, pulled cas into at 1410 ft, sidetracking.

HIDALGO COUNTY—Gulf State Oil Co.'s John Engleman 3, lot 3, blk 70, Las Mestinas gr, td 6812 ft, killed, recemented, ran sw and distillate from sand 6688-96 ft, pb, gun perf 6686-91 ft, still flowing distillate and wash water, tp 1100 lbs, cp 1600 lbs. Maxwell-Mundy-Morris' Southland Dev. Co. (Hidalgo County Water Control & Impr. Dist.) 2, lot 1, blk 20, Alamo Land and Sugar Co. sur, Alamo gr, 4 mi s Alamo, td 731 ft, pb to 650 ft, perf 638-542 ft, sd 679 ft, dropped until work begins. Pantana Pet. Corp.'s (McCullum Exploration Co.) R. W. Harding 1, 850 ft w of old Quintana Engleman 1, in lot 11, blk 94, in Mestinas gr, Missouri-Texas Land & Irrigation Co. Subd., set 12½ in sur cas at 1410 ft, dr ahead. Union Sulphur Co.'s ARGL No. 7, tr No. 2309, blk 59, 400 ft e Mercedes field, td 7608 ft, 5 in cas 7530 ft, recemented liner, dr out to 7588 ft, reperf and woc; ARGL&I Co. 8, lot 2120, blk 87, N. Capisallo Disc, N. Mercedes field, td 7822 ft, 5 in cas 7722 ft, pb to 7500 ft, pb to 7218 ft, will sdtr, set 5 in cas at 7450 ft in sdtr hole, jetted 2 bbls oil day; ARGL&I Co. 10, blk 50, tr 2418, N. Capisallo dist, dr 7370 ft.

JIM HOGG COUNTY—Theo. Hicks et al's Kohler 1, blk 9, Noriseitas gr, 3 mi nw Hebbronville, sp. J. N. Meek, Jess Martinez 1-A, sur 623, dist 3010-17 ft, show 150 ft plo, 47 grav, 25 min, set 7 in cas 3009 ft, dr plugs, show sw, recemented, swabbing abt 100 bpd of 47.4 grav oil. Sam Payne's R. Holbein 1, blk 10, Hogg Ridge subd, sh 3, Las Animas gr, lcn. Henry Swift's Halbein 1, center blk 58, sec 3, sh 3, Holbein subd, Las Animas gr, mim. Locke Purnell & Clifford Oil Co.'s Gallagher 1, blk 128, Pippin subd, Randado gr, ru.

JIM WELLS COUNTY—Camp Drlg. Co.'s Jane Schallert 1, 1134-83-ac tr, sh 3-A, Las Presenos de Abajo gr, 2½ mi w Bentonville field, ru and laying water line. Gist & Graddy's B. W. Owens 1, Poitevant sur, nw Bentonville field, sd for repairs 4900 ft. La Jita Corp.'s Fred Erck 1, sec 15, 1 mi n of Bentonville

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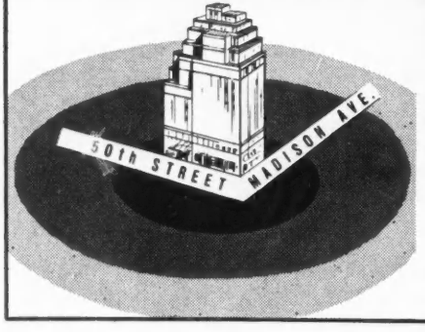

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disc well, td 5470 ft, pb set cas at 4050 ft, comp as gas well; Hayden et al's 1, ne/2 of sec 19, Richard King Farm lots, dk. Putman et al's Canales Est. 1, center blk 32, Mosser subd of Canales Est, ru. Stanolind O&G Co.'s F. L. Blundell 2 sw/4 of sec 16, 160-ac tr, King Ranch lots, coring 5404 ft; Hayden et al's 1, dst of sand 5347-59 ft, rec 925 ft plo, 15 min, 50 lbs pres, ¼ and ⅜ in ch, set cas at 5342 ft, td 5360 ft, woc.

KARNES COUNTY—Hickman et al's R. L. Barnett 1, Alex Hunter sur, sd 3000 ft.

KIMBLE COUNTY — Wilcox O&G Co.'s Hugh Spiller 1, 330 ft nl and wl sec 15, Brooks & Burleson sur, dr 1000 ft.

KLEBERG COUNTY—Clark et al's Kivlin 2, Fernando Creek, blk 8, sec 39, KT&I subd, td 2134 ft, 7 in cas 2124 ft, dr plugs, testing.

LA SALLE COUNTY—Roy Shipman's Mrs. T. A. Coleman 3, 500-ac tr, James sur, sec 514, dr 2135 ft, dr by lost joints ds.

LIVE OAK COUNTY—Barber & Miller's W. M. Blanks 1, 150 ft s of Whitsett Rd, 1500 ft sl of 850-ac tr, AB&M sur 103, sp. J. H. Durbin's Marbach 4, 429 ac tr, Stephen Hays sur, 2½ mi sw of Whitsett, sp. R. H. Feltner et al's Sanger Ranch 1, 990 ft sl, 330 ft el of w ½ of G. C. & S. F. sur 391, lcn. O. W. Killam's Schultz Live Stk Co. 1, 628-ac tr, John Hofferman sur, n of Three Rivers, dr 112 ft. Simmons O&G Co.'s Clara McGriff 5, Louis Romaro sur, 1 mi n of Oakville, dst 2116-35 ft, show 11 frbls sw and show of oil and gas. Sun Oil Co.'s J. G. James 1, 1259.3-ac tr, Pat McGloin sur, 1 mi e Mikeska, lcn.

MAVERICK COUNTY — Rio Dev. Co.'s Winchester Kelso 1, 297-ac tr in sur 2, 3 mi ne fr Eagle Pass, sd 307 ft. Thorton & Underwood's Thompson heirs 1, Uvalde School Land sur No. 2, 6 mi n of Eagle Pass, mir.

McMULLEN COUNTY — John Camp.'s Byrne Est. 4, G. Pittuck sur, 3 mi w Calliham, dr 320 ft. Comet Oil Co.'s H. L. Lark 1, of blk 110, Lark subd E. W. B. Scrugham sur, td 1028 ft, set 7 in csg 1023 ft, completing. Coursey et al's H. L. Lark 1, n½ of blk 101, E. W. B. Scrugham sur, ½ mi n Calliham, sand 1043-50 ft, set csg, dr plugs. Hagan-Stewart Oil Co.'s J. J. Kunz 1, 350-ac tr in N. Hely sur, sp. Hill et al's J. Richardson Est. 1-A, dr 1605 ft. E. M. Jenkins & Floyd's Raymond Plosczyk 1, blk 1, James Garner sur, ds 1145 ft. Loma Oil Co.'s L. Jacob Corp. 6-W, Jacob sur 10, ½ mi w Jacob field, Mirando sand 699-707 ft, carried saturation, oil sand 894-900 ft, set cas, td 902 ft, comp 15 bpd on pump. Magnolia Pet. Co.'s Mary Teal 1, Wm. Kuykendel sur No. 4, 4 mi sw Crowther, ru. E. D. Mathis' Wm. Fahler 1, a 500 ac of Fahler 1009-ac tr, C. Pittuck sur, 5 mi w Calliham, dr 750 ft. Ike W. Taylor's H. L. Lark 1, lot 72, Lark subd, E. W. B. Scrugham sur, between Jacob & Calliham fields, td 600 ft, well blew out, sprayed gas, ran wild, pumped in heavy mud after blowout and temp sd, plan dr relief well. Travelers Oil Co.'s Chas. T. Lark 3, 150 ft n No. 2, ru.

MEDINA COUNTY — Thomas & Rife's Amelia Zadich 1, S. O. Lubbock sur 504¼, se cor county, top Austin ch 2646 ft, base ch 2929 ft, top Buda 2995 ft, dst 2998-3070 ft, rec 2 jts mud, odor oil no pres. G. W. Whitting et al's Hondo Nat'l Farm Loans Ass'n 1, 24-ac tr, sec 214, 5½ mi se Hondo, reaming 671 ft, top Serp. 505 ft, oil show 662-671 ft.

MILAM COUNTY — Paul D. Crawford, Inc.'s Conoley Est. 1, Conolley tr, 85-ac, John F. Guthrie sur, 5 mi n of Thorndale, D&A 2100 ft, top chalk 2046 ft, rd corrected.

NUECES COUNTY — Barnsdall Oil Co.'s Weil 1, lot 5, McBride Partition between Saxet and Corpus Christi fields, lcn. J. T. Cox's John Harney 1, 150 ft sl and el sh 11, Harney lands, 2½ mi se Calliham, dr 3432 ft. Gem Oil Co.'s J. T. Smith 1, in center of lot 22, blk 47, abt ¾ mi n of disc well, dr below sur csg. O. W. Killam's O. S. Crook 1 ne/¼ sec 115, F. Z. Bishop subd, Driscoll Ranch, 2 mi ne of Bishop, abnd 5011 ft. H. M. Reed's R. M. Roper 1, 330 ft nl, 165 ft el and wl of lot 12, blk "E," sec 108, Paul subd, Driscoll Ranch, td 3909 ft, top sand section 3770, saturated oil sand 3888-3908 ft, td in sw sand, running cas without dst. G. M. Richardson et al's P. S. Carner 1, center of nw/4 of se/3 of sec 8, Loureles Farm tr, dk. Texon Dr. Co.'s Mable Eliff 1, A. Longria sur, 2½ mi sw of Agua Dulce field, td 6557 ft, set 7 in csg 5800 ft, perf around 5700 ft, no shows, sd.

REFUGIO COUNTY—Benedum & Trees' R. H. Welder 1, commence west corner Friedline pasture, thence n 53 degrees east 4443 ft to location in Juan Pabedan sur, ab 49, td 5928 ft, fsh job. E. W. Price et al's R. H. Wood 1, 600 ac lse in Dona Anasticia Reojas sur, ½ mi n Woodsboro and 4 mi e Refugio field, crg 5480 ft, hard formation. Tidewater Oil Co.'s E. G. Lengrof 1, 220-ac tr, J. Collyer sur, eastern portion of county, pits dug, moved in material, bldg rd.

SAN PATRICIO COUNTY—Acreage Roy alty, Ramsey Est. 1, 660 ft nl and wl W. B. Giddings sur, blk 1, 80-ac tr, 6 mi s Odem, lcn. Atlantic Oil Prod. Co.'s Maryland Trust Co. 1, blk 17, B-C subd, 1150 ft sw disc well. Aransas Pass field, set whipstock at 4904 ft, sdtr, ds stuck in sdtr hole, sand 6541-47 ft. saturated section 6533-55 ft, ran abt 5400 ft 7 in cas, could not set on btm, pulling pipe to ream down. Hiawatha Oil Co.'s E. H. Welder 4, sec 19, Welder Ranch subd, dr 6100 ft. Conroe Drlg. Co.'s D. M. McGloin 1, sec 33, P. Pauls subd of Coleman Fulton Pasture Lands, 3 mi s Odom, D&A 6014 ft, ran electric formation test. L. A. Douglas & Empire O&G Co.'s Hulda Konze 1, sec 15, tr 3, 300-ac tr, Welder subd, Patrick Fitzsimmons sur, 3½ mi sw Sinton, 4830 ft, dr, ran electric formation test at 4200 ft. Eleanor Oil Co.'s Wm. Kline 1, 451 ft el, 547 ft nl of lot 5, blk "C", Coleman-Fulton Pasture Co. subd, 2½ mi se of Gregory, dk and mir. Plymouth Oil Co.'s E. H. Welder 2-D, sec 4, Welder Ranch subd, 2 mi e Sinton field, sand 5533-41 ft, set 5⅞ in cas, pb slightly crg 6500 ft. Trinity Drillers' W. C. Mayfield 1, lot 11, Roos subd, 2 mi n of White Point gas field, dr 2200 ft.

STARR COUNTY—Sam Adam's Garza 1, Military Reservation in sh 20-A, porc 50, Juris of Reynosa, sd 600 ft, temp abnd. J. F. Anderson's Yzaguirre 1, 139-ac tr, porc 79, sd 2650 ft, wo heavier rig, will dr to 3500 ft. Porter Evan's H. F. Ferry 1, blk 3, Evans sub, Ferry lands, porc 86, 7 mi se Rio Grande City, dr 1780 ft. Davenport's Kelsey-Bass 1, Davenport subd of n 585 ac of porc 86 and 87, Camargo juris 4500 ft ne and slightly s Larkins & Warr's Kelsey-Bass 1, 2 mi w Barbacoas field, mim. F. Davenport & Slick Urshel's T. B. Slick Est. 1, el of sec 485, sp and dr water well. A. G. McMathis' M. Guerra & Son 1, blk 25, Conroe subd porc 55, Juris of Nior 1, sd 330 ft.

TRAVIS COUNTY—W. B. Bottinfield et al's P. C. Wells Est. 1, 150 ft nl, 1558 ft wl, J. Harper & J. B. Keurk sur, lcn. J. Morgan Russell's Mrs. H. Lindgren 1, 600 ft sl, 1000 ft el of 113-ac tr, Kimbro sur, dr 1148 ft lime. A. C. Schram, Stemholm Est 1. 165 ft sl, 2625 ft wl of tr, J. B. Kemp sur, 142-ac tr, lcn.

VICTORIA COUNTY—Plymouth Oil Co.'s J. J. Welder 1, 11,371.9-ac tr, S. Beld'ng sur, ab 141, 7 mi e of Nursery, wo water well. Portilla Drlg. Co.'s P. H. Welder 1, Felipe Dimmitt sur, s of Victoria, sand 4272-79 ft, comp 20 mcf gas day, opens Hughes field. Portilla O&G Co.'s P. H. Welder 2, 466 ft sw Missouri Pacific RR, 933 ft w No. 1 Felipe Dimmitt sur, set sur cas at 1010 ft, woc.

WEBB COUNTY—Lu-Tex Oil Co.'s Lone Star Coinst. Co. 9, porc 12, 12 mi nw of Laredo, fsh 2310 ft. Mid-Continent Pet. Corp. & Oklahoma Co. of Tex., Inc., E. T. Lubacher 1, nw/4 of sec 1394, dr 300 ft. H. E. Nessley's A. M. Bruni heirs 1, 80-ac tr, sec 450, 3 mi s of Kellam Extension to Cole field, lcn; A. M. Bruni heirs 2, wl of 33-ac tr, sec 449, lcn. Smith & Story and Kirkwood and Morgan's Lloyd 1, sur 23, 1 mi n of Laurel field, Mirando, sandy shale 1851-63 ft, oil saturation throughout but dst got no rec account sh, dr ahead for rosenberg, if no prod lower, will pb, set cas below Mirando, gun perf and make swabbing test.

WILLACY COUNTY — Ruiz & Norton's Santa Rosa, Inc. 1, lot 11, blk 31, Santa Rosa subd, sh 44, San Juan de Carricitos sur, dk and sd for rig. Shell Pet. Co.'s Yturria Land & Cattle No. 1, sh 65, San Juan de Carritos gr, La Sal Veja prospect, coring 7660 ft, sh.

WILLIAMSON COUNTY—H. H. Coffield et al's Paul Horn 1, 76-ac tr, J. Bevil sur, sd 654 ft. Fred Hughes' M. A. Bachmeyer 2, C. C. Browning sur, sd 1170 ft.

ZAPATA COUNTY — Gilcrease Oil Co.'s Antonio Trevino et al 1, 330 ft nwl, nel of blk 5, sec 3, Mode subd, porc 2 and 3, 17 mi w Comitas field, lcn.

EAST TEXAS

ANDERSON COUNTY—Gulf Oil Corp.'s M. J. Ross 1 (54.7-ac), Robt. Erwin sur, Camp Hill area, elev 487 ft, top Georgetown lime 5452 ft, top anhydrite 7941 ft, dr anhydrite 7980 ft. Tide Water-Seaboard Oil Corp.'s J. N. Edens 15 (988.6-ac), Sam Snider sur, Cayuga field, elev 313 ft, top Georgetown lime 4619 ft, top upper Glen Rose 6040 ft, top anhydrite 6995 ft, showed 3,000,000 ft gas and dark colored distillate on drill stem test in Lower Glen Rose at 7350-7414 ft, coring 7420 ft.

BOWIE COUNTY—Fay T. Chew and Brassett's Byron Barkinson 1 (90-ac), J. W. Parkman sur, 2½ mi n Leary, sp and sd. Ferguson and Hill's A. Y. Breckenridge 1, Nancy Dycas sur, 4 mi w Texarkana, sp and sd. Woodley and Bentley's J. D. Lumpkin 1 (245-ac), John McDermott sur, 1¼ mi sw Dalby Springs, elev 290 ft, Annona chalk 1665-2090 ft, sd 3665 ft.

CHEROKEE COUNTY—O. C. Garvey and Mayo's W. T. James-Pure 1 (50-ac), Jessie T. Jones sur, lcn.

COLLIN COUNTY—Port Bolivar's O. G.

CLEAN OUT
WITH A
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SAND PUMP

We make no claims for the MILLER Sand Pump that it can't deliver. It's construction is right—consequently hundreds of oil companies throughout the world look upon it as the standard tool for quickly and economically cleaning sand and mud from the bottom hole of wells, increasing production and putting them back on a paying basis.

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(IN PUMP)

When sand or sediment is tightly packed the hard surfaced Chisel edge breaks the sand so it can be easily picked up in the pump.

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SAND PUMP CO.

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20TH FLOOR STERLING BUILDING HOUSTON, TEXAS

Durning-Clarkston 1-A (140-ac), Wm. Creager sur. Pat. 1193, elev 722 ft, show gas 4039-70 ft, sd 4094 ft; A. Shirley 1 (50-ac), Gwynn Morrison sur, 1 mi e Anna, dk.

DELTA COUNTY—W. S. McGee et al's Mrs. P. W. Miller 1 (52-ac), E. Spencer sur, 1 mi sw Cooper, dk.

FALLS COUNTY—J. Edward Mills et al's Sam Grucholski 1 (40-ac), Dennis Herold League, 5 mi sw Kosse, elev 521 ft, top Pecan chalk 2114 ft, Austin chalk 2765-2946 ft, Georgetown lime 3544-3825 ft, trace gas, top Edwards lime 3867 ft, coring 3870 ft.

FRANKLIN COUNTY—Atex Oil Co.'s R. L. Jaggers 1, J. Humphreys sur, 1½ mi nw Winfield, elev 398 ft, Pecan chalk 1810-1850 ft, sd 3010 ft. Virginia Hudson et al's B. M. Patterson 1, E. Rice sur, 3 mi sw Hagansport, elev 411 ft, dk.

GRAYSON COUNTY—Olson Drl. Co.-Jas. H. Gardner et al's SW Life 1 (160-ac), J. C. Jamison sur A-865, 3 mi n Pottsboro, elev 767 ft, top Sylvan shale 4870 ft, Viola lime 4901-5096 ft, td 5690 ft, pb to 4426 ft, dr by junk 4665 ft. Port Bolivar Co.'s Creed Taylor 1 (160-ac), J. Fitzhugh sur, 3 mi se Gunter, dr 4120 ft.

HENDERSON COUNTY—Wm. McDougal, Tr. et al's Elvira Price 1 (216-ac), M. Matthews sur, 3½ mi s Trinidad, elev 294 ft, sp and sd.

HOPKINS COUNTY—Alf Beck et al's H. J. Smith 1 (42.8-ac), Berry Merchant sur, 3 mi sw Pine Forest, lcn. W. E. Duffey et al's Bassham 1 (52-ac), C. A. Galbraith sur, lcn. D. S. Hager, W. P. Luse & Russ Pet. Co.'s J. E. Worsham 2 (150-ac), A. O. Wetmore sur, 2½ mi s Sulphur Bluff, elev 429 ft, Pecan chalk 1505-1600 ft, top Red Beds 3235 ft, top Georgetown lime 3690 ft, top Paluxy series 4482 ft, top oil pay 4521 ft, td 4577 ft, completed flowing 23½ bbls oil per hr via tubing. A. T. & J. C. Johnson et al's J. F. Irvin 1 (40-ac), D. Fuller sur, lcn. R. T. Sullins et al's H. W. Wilson 1 (8½-ac), A. O. Wetmore sur, lcn. G. C. Tisdale et al's M. Flippen et al 1 (255-ac), A. O. Wetmore sur, lcn.

HOUSTON COUNTY — E. R. Mount, Branch et al's Dr. P. S. Griffiths 1 (136-ac), Frank Johnson sur, 3 mi sw Crockett, rig.

HUNT COUNTY—Penn Oil Corp.-Elmer S. and Fox Wood's A. B. Manning 1 (57½-ac), Sally Owens sur, 5 mi ne Lone Oak, dk.

KAUFMAN COUNTY—E. G. Colton, R. P. Lester et al's Barrow Bros. 1 (40-ac), J. D. Taylor sur, 8 mi ne Elmo, elev 528 ft, Austin chalk 2235-2681 ft, top Georgetown lime 4194 ft, top Paluxy series 4773 ft, top Glen Rose 5165 ft, top massive anhydrite 5742 ft, td 5968 ft, fsh 2000 ft drill pipe frozen near 3600-foot level.

LAMAR COUNTY—J. S. Abercrombie Co.-Harrison Oil Co. & Hogg Bros.' C. M. Terrell 1 (320-ac), Abner Hill sur, 4½ mi se Paris, elev 538 ft, top Woodbine series 1279 ft, top Georgetown lime 1575 ft, dry and abd in shale 1596 ft. J. A. Forester et al's J. S. Woodward 1 (18¾-ac), J. W. Woodward sur, 1½ mi e by s of Minter, elev 402 ft, top Georgetown lime 2256 ft, Paluxy sand 3060-3144 ft, top anhydrite 3735 ft, base hard anhydrite 4075 ft, broken to 4105 ft, dr 4830 ft.

NAVARRO COUNTY—Calto Oil Co.'s Etta Black 1 (266-ac), Bale Thorp sur, Bazette area, lcn for 6000-ft test.

RED RIVER COUNTY—Annona O&G Co.'s Leo Roberts 1 (211.86-ac), Jas. Bankston sur, 2 mi ne Annona, elev 396 ft, Pecan chalk 40-380 ft, top sand 1423 ft, sd 1522 ft. R. H. Manning and Texfornia Co.'s Hooker-Hughes 1 (80-ac), MEP&P Ry sur No. 642, 6 mi sw Lydia, elev 307 ft, top broken Pecan chalk 995 ft, dr 1260 ft.

ROBERTSON COUNTY—J. Edward Mills et al's Tony Congelosi 1 (75-ac), Geo. A. Nixon League, 3½ mi sw Hearne, dr 600 ft.

RUSK COUNTY—John W. Merritt et al's J. A. Stallings 1 (47-ac), Thos. Uzzell sur, 2½ mi s Eastex field, dk.

SMITH COUNTY—Caroyln and Hastings et al's Bennett 1 (80-ac), Robt. Walters sur, 3 mi ne Winona, sp and sd.

UPSHUR COUNTY—Barnett Pet. Corp.'s G. T. Askew 1 (100-ac), J. W. Oliver sur, 4 mi nw Big Sandy, elev 382 ft, Pecan chalk 3338-3630 ft, top Austin chalk 4642 ft, dr 4800 ft. B. L. Watson et al's W. O. Irwin 1, D. R. Cannon sur, 3 mi ne Coffeyville, mim.

POSITION WANTED

Salesman with wide experience selling and directing salesmen desires connection in southwest with manufacturing concern selling to the production or refining trade. Available September 15th. References furnished. Salary preferred. Address Box 200, c/o The Oil Weekly, Houston, Texas.

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EAST TEXAS BORDER COUNTIES

HARRISON COUNTY — Overtex Oil Co. (formerly W. F. Bridwell trustee) Platt 1, F. C. Baker sur, dr 4375, Hanover Bergendoll et al's Buchanan 1, Wm. McIlvain sur, fsg 4120 ft.

PANOLA COUNTY—Gulf's Pierce & Chesbro 1, J. H. Shanan sur 10in csg 1465, dr 3160. A. C. Glassell et al's Frost 1, Mary S. Potts sur, dr 4005 lime and shale, Danciger O&R Co.'s J. W. Tatum 1, Alfred Bissell sur, lcn Logansport PL Co.'s Rushing 1, Manning Smith sur, fsh 2659 ft.

SHELBY COUNTY—Rubeling & Potter's O. H. Polly 1, Wm. Whisner sur, dr 4175 ft. Mulroy & Curtin's C. Hayden 1, D. F. Yordt sur sd 2000, H. A. Stebbinger et al's Pickering Lbr. Co. 1, C. F. Henry sur well killed, cored 5024-34, arr set 5-in csg, td 5034 ft.

TEXAS GULF COAST

BRAZORIA COUNTY—Humble's Moller 1, Danbury field, S. A. Towsey sur, perforating csg 6114 to 6123 ft.

BURLESON COUNTY—Red Bank Oil Co.'s Grann 1, Chriesman area, E. Sante sur, dr shale 3961 ft.

COLORADO COUNTY—Sterling's South 1, Garwood area, I&GN sur, sec 41, sd 750 ft.

GALVESTON COUNTY — Shell's Maco Stewart 1, Hitchcock prospect, J. Spillman sur, woc 8020 ft.

GRIMES COUNTY—Crooke's Greer 1, near Carlos, P. B. Connor sur, sd 2929 ft.

HARDIN COUNTY—Republic & Houston Oil Co.'s Brooks 1, Silsbee prospect, J. W. Brooks sur, burning 6982 ft.

HARRIS COUNTY—Bunte Oil & Gas Co.'s Graves 1, Bammel prospect, C. Walters sur, dr shale 3065 ft. Houston Oil Co.'s Lackner 1, Eureka area, H. Reinerman sur, fsh 7682 ft. Stanolind's Angello Candelari 1, Reels & Trobough prospect, Reels & Trobough sur, dk.

JEFFERSON COUNTY — Sun's Paggi 2, Nome area, J. W. Kirby sur, flowing into burning pits 6060 ft.

MATAGORDA COUNTY—Texas Gulf & Superior's Wadsworth 1, Sheppards Mott, S. R. Fisher sur, dr shale 8575 ft. Sterling's Baer 1, sw of Sargent, S. Hoit sur, abn 6930 ft. Sun's Craig 1, Hawkinsville, T. Williams sur, ru to pump, 5150 ft. Teitts & Harris's Pierce Estate 1, Blessing prospect, J. W. E. Wallace sur, sd 2191 ft. Texas Crusader Oil Co.'s Hawkins 1, Sheppards Mott, S. R. Fisher sur woc 800 ft.

MONTGOMERY COUNTY—Red Bank Oil Co.'s Central Coal & Coke Co. 1, nw of Montgomery, T. P. Whitmore sur, spudded and sd. Gates & Richard's Yarbrough 1, Splendora area, Wm. Barker sur, dr shale 4899 ft.

ORANGE COUNTY—Tide Water's Brown Fee 1, Cow Bayou prospect, W. Dykes sur, dr shale 2729 ft.

WALKER COUNTY—L. M. Gay's Stubblefield 1, w of Trinity, G. Badilla sur, dr shale 2670 ft.

WASHINGTON COUNTY — Carl Dyer's Thomas 1, n of Brenham field, H. Hensley sur, sd 2657 ft. Sun's Lauter 1, Clay Creek, N. Clay sur, woc 7454 ft.

WHARTON COUNTY — Texas Crusader-Cockburn's Fee 1, Magnet prospect, J. Clements sur, woc 5562 ft. Pure's Borden 1, Blue Basin prospect, W. H. Leckie sur, abn 7993 ft.

WYOMING

ALBANY COUNTY—James Lake Oil Co., George and Hunt 1, nw ne se 5-17n-75w, dr 2550 ft. Ohio Oil Co., Elisabeth Stiles 1, swc 12-15n-75w, dr 2677 ft.

CARBON COUNTY — Medicine Bow Oil Co., Hintze-Government 1, cne se 18-22n-78w, dr 317 ft. Hal Blakeman's Chapple 1, ne nw 33-21n-76w, dr 751 ft.

CONVERSE COUNTY—E. B. Jones, State 1, sw sw sw 16-32n-69w, sd 3050 ft.

HOT SPRINGS COUNTY—Empire State Oil Co., Larson 1, 33-44n-93w, dr 190 ft.

NIOBRARA COUNTY—Lewis, Gokel 1, sw ne 31-34n-62w, dr 710 ft. Adams-Louisiana Co., Spaugh 1, cnw ne 18-35n-65w, ru.

PARK COUNTY—General Petroleum Corporation's Government 1, nw nw nw 33-47n-100w, rur.

WESTON COUNTY—John Brorby et al's Lemke 1, se ne 10-48n-65w, spd 10 in hole.

NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Catalogs • Books

PRESSURE RECORDERS
The Bristol Company

The Bristol Company, Waterbury, Connecticut, announces a new series of low-range recording gauges and controllers, known as the Model D40M series. These instruments are equipped with enclosed bell-type measuring elements and are offered for draft or pressure in minimum ranges of 0 to 0.2 inches of water and maximum ranges of 0 to 2.0 inches of water. Because of the large operating area of the liquid-sealed bell, the measuring element is accurate and has the power to respond instantaneously to scarcely perceptible pressure changes.

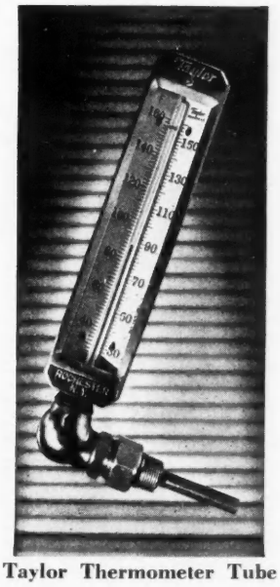
The control instruments operate on the basic free vane principle of pneumatic control. They are equipped with the Ampliset sensitivity adjustment for synchronizing throttling range with process lag.

Instruments of this series are compact and self-contained in a 12-inch case. The whole instrument can be easily carried under the arm.

Low-Range Model D40M recorders and controllers are offered for wall and flush panel mounting.

THERMOMETER TUBE
Taylor Instrument Companies

Taylor Instrument Companies, Rochester, New York, claim to have corrected difficulty of reading a mercury-in-glass thermometer in a fundamental manner by a uniquely designed thermometer tube which is extremely easy to read.

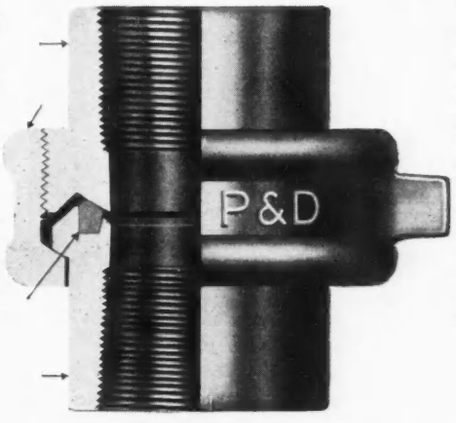


Taylor Thermometer Tube

This new thermometer tubing is known as BINOC and claimed advantages of the design include: more than twice the accustomed angle of vision combined with high magnification of the mercury column; binocular vision (i.e., readability with both eyes) at normal or greater than normal distances; triple-lens construction gathers three times as much light and concentrates it behind the mercury column, making the column stand out in sharp relief. Legibility of these new industrial thermometers is further improved by the bold, black numerals and graduations on the cream-tinted, non-tarnishing scale.

MISALIGNING UNION
P & D Specialty Company

P & D Specialty Manufacturing Company, Houston, has placed on the market a new misaligning union designed as Type "D". Designed for use on boiler headers, slush pump manifolds, steam lines, standpipe connections, field pipe lines, etc., this new union provides for an approximate misalignment of one inch to one foot. It is available in test pressures ranging from 1000 to 6000 pounds. The 1000 and 2000

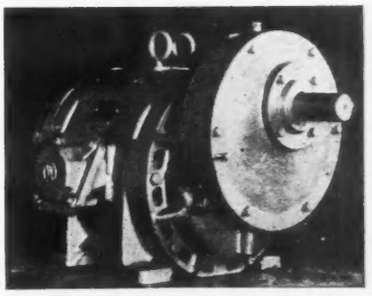


pound test unions, having standard length hubs, are made of malleable iron, while the 3000 and 4000 pound test unions, which also have standard length hubs, are of forged steel. The 5000 and 6000 pound test high pressure unions have long hubs, and are also of forged steel. Nuts for the forged steel unions are made of chrome nickel steel.

According to the manufacturer, the Type "D" misaligning union can be installed or dismantled quickly. It is constructed of only four parts: a swivel hub, bronze seat ring, nut hub, and nut. The bronze seat ring is replaceable. Three lugs extend from the nut to permit tightening or dismantling with a hammer.

GEARMOTOR
Westinghouse Electric and Manufacturing Company

Westinghouse Electric & Manufacturing Company, Pittsburgh, recently announced a new line of single reduction explosion-proof gearmotors ranging in size from 1½ to .75 horsepower. For application in Class 1, Group D hazardous locations where speed reduction is required, these gearmotors have many uses because of their compact design and high efficiency.



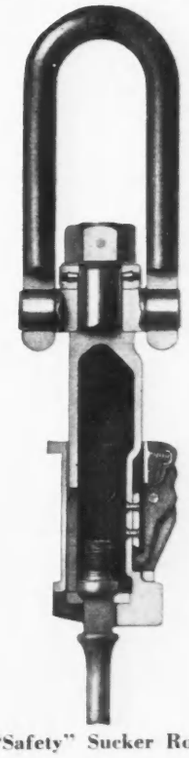
Westinghouse single reduction gearmotor for use in hazardous locations

Built to carry the maximum torque the motors will develop, the gears are of the single helical type, heat treated by a special "tough hard" process to provide maximum load-carrying capacity and resistance to wear and shock. Anti-friction bearings assure high efficiency and maintain correct gear center distances.

They are inspected and approved by the National Board of Fire Underwriters for use in hazardous atmospheres containing gasoline vapors and other gases or vapors having equivalent or less hazard such as petroleum products, ethyl alcohol, methyl alcohol, acetone, and lacquers, solvent vapors.

SUCKER ROD ELEVATOR
Axelson Manufacturing Company

Axelson Manufacturing Company, Los Angeles, announces a sucker rod elevator designed to eliminate personal injury in handling sucker rods, and damage to rods,



Axelson "Safety" Sucker Rod Elevator

tubing and other derrick equipment.

These elevators according to the manufacturer, are proportioned to handle operating loads in the deepest wells with a high factor of safety, and all structural parts that support weight are made from special alloy steel heat treated and machined. A double swivel with Timken roller bearings gives responsive handling and makes the elevator hang freely and vertically at all times. The characteristic feature is a latched sleeve that must be raised to admit the rod and lowered to lock it in place. These operations are manual, and when the sleeve is in the locked position there is no possibility of a string of rods being disengaged or dropping out.

Instead of hanging on the tapered portion of the rod below the wrench square, the rods are engaged on the wrench square, preventing wedging and injury. When running in a string of rods, the operator on the floor locks the sleeve in the open position ready for the derrick man to pick up a string, after which the sleeve is locked in the closed position. When rods are being pulled, the operation is reversed. The elevator cannot turn over if the suspended weight is suddenly released, the manufacturer claims. The device is protected by Patent No. 1,798,-296 and is manufactured by the Axelson Manufacturing Company of Los Angeles.

Petroleum Technology, 1935, Published by Institute

"Petroleum Technology, 1935," is a comprehensive bibliographical summary of developments in petroleum technology during 1935, published recently by the Institution of Petroleum Technologists, Aldine House, Bedford Street, Strand, London, W.C. 2, England. The book contains over 2000 references to publications on petroleum and cognate subjects.

"Petroleum Technology, 1935," marks the first appearance as a separate volume of the Annual Reports on the Progress of Naphthology published by the institution annually since 1924. The book aims at supplying the technologist an authoritative survey of the trends of development which occurred in the industry during 1935.

Copies of the book may be obtained from the institute for eight shillings, post free.

Compressor

Chicago Pneumatic Tool Company, New York City, has ready for distribution a four-page bulletin, No. SP-1953, which explains in detail a new type compressor that was particularly designed for use where a small and easily moved model is needed.

This Week with the Industry's EQUIPMENT SUPPLIERS

Jones Tulsa District Manager for Republic Steel

Appointment of Hoyle Jones as district sales manager with headquarters in Tulsa, has been announced by N. J. Clarke, vice president in charge of sales of Republic Steel Corporation. This appointment fills the vacancy caused by the recent death of C. S. Powers.

HOYLE JONES

Jones began his career in the steel and allied industries in 1904 with United Zinc & Chemical Company, in his home town of Kansas City, Missouri. This company later was acquired by American Zinc Company and in 1907 he was appointed assistant manager with offices in Chicago. He went to St. Louis in 1908 as manager of American Zinc Company where he remained until 1910 when he returned to Kansas City as secretary of Jacques Steel Company. In 1911 he started in business for himself as manufacturers' agent for a number of eastern steel companies including LaBelle Iron Works, Detroit Steel Products Company, Superior Steel Company, Chicago Bridge & Iron Works, and Wheeling Sheet & Tin Plate Company. At the beginning of the war, he was appointed manager of sales of LaBelle Iron Works of the western district.

Soon after this country entered the war he was commissioned captain in the ordnance department of the army, stationed at St. Louis with jurisdiction over the production of war materials from the Mississippi river west. He was discharged from the army in 1919 and organized and became president of Superior Tube Company. He remained as head of that company until just prior to his appointment as district sales manager of Republic Steel Corporation.

Medart Company Announces Changes in Personnel

The Medart Company, St. Louis, announces the following changes in personnel: George S. Denithorne as sales representative in the Philadelphia area, with offices at 1224 Commercial Trust building, Philadelphia; John M. Titzel, 412 Westinghouse building, Pittsburgh, as sales representative in the Pittsburgh area; James W. Anderson of Dallas, Texas, has been transferred to Chicago, where The Medart Company will open a district office September 1; Walter G. Kessling of the home office also has been transferred to Dallas. Kessling is replacing J. W. Anderson.

Engstrom Made Chief Engineer for Hydril

Bert L. Stone, vice president and general manager, announces the appointment of R. L. Engstrom to the position of chief engineer of the Hydril Company.

R. L. ENGSTROM

FOR SALE OR LEASE

Excellent Industrial Site and Plant in choice location, Houston, Texas. Shop Building 90′ x 60′ fully equipped with wiring and overhead crane, plumbing and gas. Ready to move into. Also 40′ x 30′ Blacksmith Shop. Located at 6418 Esperson—just a block from Navigation Blvd. Contains 23,067 sq. ft. Will sell or lease at a very attractive price. For further information and details write P. O. Box 1469, Oklahoma City, Okla.

Engstrom has been with the company for more than nine years in the capacity of assistant chief engineer. He has been closely associated with Fred Stone, chairman of the company, and Bert Stone in development of many of the Hydril products. His headquarters will be in the Torrance factory of the company.

Bridgeport Machine Company Opens Five New Stores

Bridgeport Machine Company is opening five new branches in the Gulf Coast, Louisiana, and West Texas. A new store at Rodessa, Texas, has just been completed and is open for business with a complete line of the company's products and those it distributes for other manufacturers. Large all steel and concrete buildings for new distributing branches are also under construction at Corpus Christi, Odessa and Kirmet, Texas. These will be completed and stocked within a week or 10 days. Bridgeport Machine Company now has in operation more than 50 branch stores, sales offices, warehouses and material yards, giving day and night service from Kansas to the Gulf.

Bridgeport Machine Company store at Talco, Texas

Bettis Rubber Company to Sell Bettis Protectors

Bettis Rubber Company, Ltd., 1728 East 7th Street, Los Angeles, has been exclusively licensed by Wm. I. Bettis, inventor of the casing protector bearing his name, to manufacture and sell his protector.

B. H. Barnes and Bill Huff, who control Bettis Rubber Company, are well known to the trade in California, the Mid-Continent and in the export field, are are expanding their service to cover the industry adequately. They have appointed Gulf Engineers, Inc. of Houston, as distributors for the Gulf Coast area and have stocks of Bettis Protectors at central points.

The Bettis protector is made from a special analysis of unusually tough rubber especially developed to meet the sub-surface conditions encountered in drilling oil wells, and is manufactured by Bettis Rubber Company, Ltd. It is covered by the several patents of Wm. I. Bettis.

A. A. P. G. Publishes Book on Tampico Region Geology

John M. Muir's "Geology of the Tampico Region, Mexico" is a recent publication of the American Association of Petroleum Geologists, headquartered in Tulsa.

The book consists of 280 pages, including bibliography and index. It contains 15 half-tones, 41 line drawings, and 5 maps in a pocket. Bound in blue cloth, gold stamped, the book sells for $4.50 to non-members and for $3.50 to members of the association.

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Precise vacuum-testing PROVES the PERFECT TIGHTNESS of every Hough Ball and Seat. We guarantee it!

Hough "REPELEX" Ball and Seat is made from genuine Stainless Steel. It gives maximum resistance to rust, abrasion, and cutting action of sand. Four other specialized types — STEELEX, BRONZEX, RESISTEX, COMBINEX—meet all the requirements of individual wells.

Oil-field distributors carry Hough products in stock. The Charles N. Hough Mfg. Company, Franklin, Pa.

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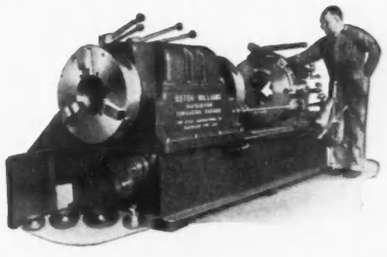

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Squeaks from the Bull Wheel

Labor-Saving

They were having a busy day making and boiling plum puddings.

"Mary," said the mistress, "just go and see if that large pudding is cooked. Stick a knife in it and see if it comes out clean."

In a few minutes Mary returned. "The knife came out wonderfully clean, ma'am," she said smiling, "so Oi've stuck all the other knives in it."

And by Yourself

"Doctor, can you cure me of snoring? I snore so loud that I awaken myself."

"In that case I would advise you to sleep in another room."

Greatly Oblige

A note to Johnny's teacher read: "Please excuse Johnny's absence yesterday. He fell in the ditch and got his pants muddy. By doing the same you will greatly oblige his mother."

Right Address

Two friends, who had not seen Macpherson for some years, called at his house on Saturday evening. Mrs. Macpherson answered the door.

"Does Macpherson live here?" they asked.

"Ay," was the woman's reply, "just carry 'im in!"

Not Concerned

"Do you ever cut anyone?" he asked the barber's assistant after the lather for a shave had been applied.

"I do sometimes," replied the assistant, stropping the razor vigorously.

"What happens then?" he asked.

"Well, the boss fines me a bob if it's a small cut and five bobs if its a nasty one," answered the assistant.

"Does he always fine you?"

"Always," replied the assistant stropping the razor still more vigorously. "But he can fine me as much as he likes 'cos I've drawn a horse in the Irish sweep."

English As She Is Written

The general manager of an oil company in Tampico, Mexico, recently received the following letter from a previously employed Chinaman, making application for another job:

"Mr. X:

You my friend I like you see a job to mi working I now live to this hous donmicilia Ave. Juarez . . . Ver Sometimes writen to me I go to Tampico to see you I am thank you very much you forgive me I beford work for Mrs. Z sometime see camp and farmily see my job I like to you I remain,

Yours very truly,
L.L.L.

Need a Durable One

A poverty-stricken backwoodsman had become the father of his twelfth child. The cradle in which the child lay had served its purpose for eleven preceding children and its rockers were so far gone, there was no more rock in them.

"Guess we gotter git a new cradle, Jim," said the wife with a plaintive sigh. "This one's erbout all used up." Jim looked over the delapidated crib that was ready to fall apart.

"I guess you're right, Sal," he drawled, "I guess we gotter git a new one. Here's two dollars. Next time you go ter town, git one at the store—but this time git one that will last."

Smoke

How many cigars do you smoke a day?

About ten.

What do they cost you?

Twenty cents apiece.

My, that's two dollars a day. How long have you been smoking?

Thirty years.

Two dollars a day for thirty years is a lot of money.

Yes it is.

Do you see that office building on the corner?

Yes.

If you had never smoked in your life you might own that fine building.

Do you smoke?

No, never did.

Do you own that building?

No.

Well, I do.

Advice to the Lovelorn

Q. I have been trying various scents of perfume to land my best beau, but fragrance doesn't seem to work. What would you advise?—Anxious.

A. You have a good idea, but you are following the wrong scent. If you'll try the alluring aroma of ham and eggs and a cup of good coffee, Romeo should run true to form.

Q. Do you think the average man objects to kissing a girl who uses lipstick? —Winnie.

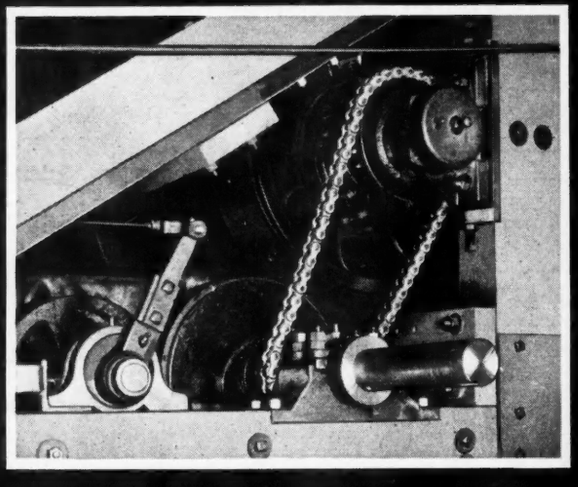
A. This question, Sweetie, is right down our alley. Confidentially, it is vastly more refreshing when a man can kiss a girl and taste nothing but the girl.

Q. Do you think I should get married? I've always wanted to raise a family but the man I love simply can't bear children.—Rosie.

A. Well, you expect too much of a man.

Q. After two years of married life my husband and I both find we've made a mistake. Should we separate?

A. Yes. But what will you do with the mistake?



CHAIN-DRIVEN SAND REEL

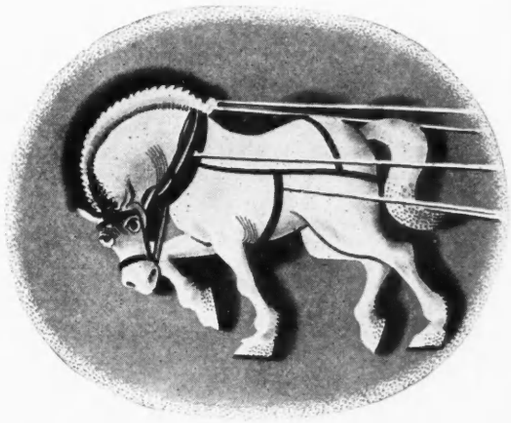
The chain-driven sand reel on STAR SPUDDERS provides a sturdy, positive drive in all kinds of weather. It is mounted on self-aligning ball bearings and uses an alloy air-cooled brake with lined band—the best possible brake for deep wells and heavy duty. Before you buy a Spudder get all the facts on Star Performance. The Star Drilling Machine Co., Akron, Ohio. Branches: Chanute, Kansas; Wichita Falls, Texas; Portland, Oregon.

STAR DRILLING MACHINES

BUYING PIPE

IS LIKE BUYING

HORSEPOWER



You wouldn't think of buying a truck with a 110 h.p. engine when 55 h.p. would do the work. . . . Same way with pipe for gas-gathering lines, as you can see by a quick examination of "Armco Spiral Welded."

Here is a trim, easy-handling pipe that has all the strength it takes *plus*—that can readily be cut and fabricated in the field—whose welding quality is tops—that is smooth inside for high flow capacity—that has plenty of "teeth" for gripping primer and field coats. Armco Spiral Welded is also a ductile pipe, which gives you generous flexibility for undulating field work.

Before you order pipe for that next job, check in with us on Armco Spiral Welded Pipe. Just outline the requirements—or, simpler yet, mail your specifications. The American Rolling Mill Company, Pipe Sales Division, Middletown, Ohio; Tulsa, Oklahoma, 538 Mayo Building.

ARMCO

ARMCO

SPIRAL WELDED PIPE

"PLUS" VISES

RIDGID Pipe Vises Give You a Bonus of Extra Values

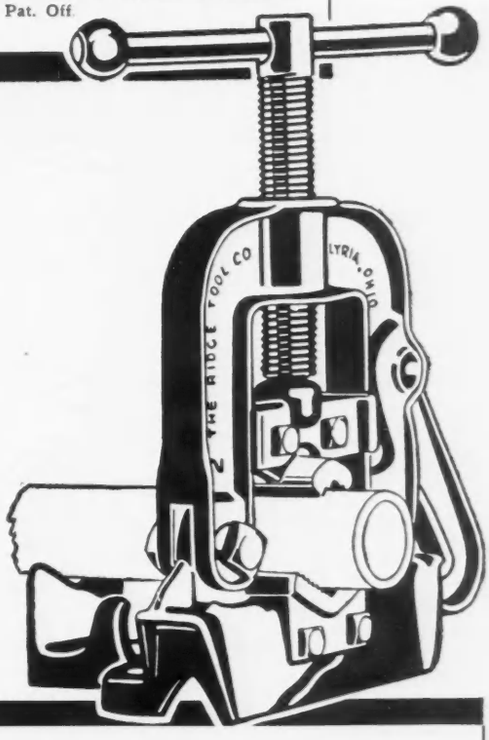
● Conventional in design, these RIDGID Vises have unusual special features that make them unusually satisfactory to use. For instance, all types and sizes have pipe rests and pipe benders. "No-Mar" jaws are available in yoke vises of 2" and 2½" capacities. Post vises are equipped with holders for oil can or dope pot and vise stands have handy tool trays. All frames are made of special malleable metal and jaws of highest quality heat-treated tool steel.

Ask your Supply Store

THE RIDGE TOOL CO., ELYRIA, O.

RIDGID

Reg. U. S. Pat. Off.



RIDGID, the pipe wrench with the guaranteed unbreakable housing. Strength that meets U. S. Government and Navy specifications.

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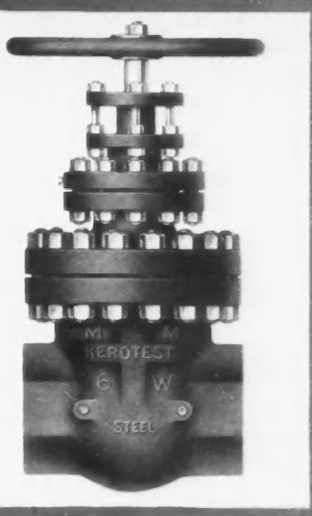
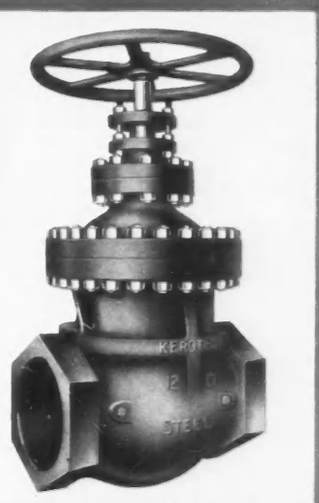
Meet the KEROTEST DRILLING VALVE FAMILY

Kerotest Type "S" Extra Heavy 6000 lb. Drilling Valve built with exceptionally heavy walls and of extreme dimensions throughout to withstand the most severe field service due to shock, sand cutting and those many unusual conditions that continuously arise in wildcat operations, unproven territories, loose sand and unexpected pressure formations.



Kerotest Type "W" Standard 6000 lb. Test Valves. Designed with large factors of safety and minimum overall dimensions affording very compact hookups. Also supplied in 5000 lb. test when required.

Kerotest Type "WA" Standard Cross Type 6000 lb. Test Drilling Valves. A popular type of high pressure valve that combines the advantages of drilling valve design with cross connections resulting in a very great saving in space as well as eliminating joints and connections. Outlet arms threaded 4" or 6" as desired. Provides ample clearance for attachment of flow line valves, direct to outlet arms.



Kerotest Type "D" 3000 lb. Test Drilling Valves. Standard design suitable for 1500 pounds working pressure with rising or non-rising stem. Also supplied in 4000 lb. test when required.

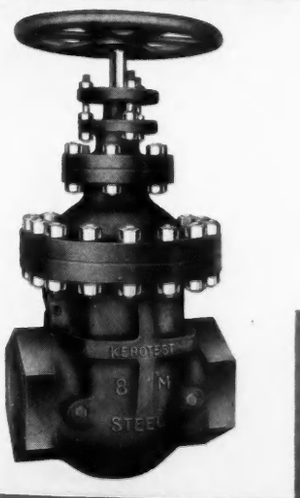
There's a Type and Size Available for every Pressure and Service Condition

Kerotest offers a type and design of Drilling Valve to meet every need in all test pressures ranging from 6000 lb. to 1000 lb.—regularly furnished with either screwed or flanged ends in all standard sizes.

Heat Treated Manganese Molybdenum Cast steel is regularly employed on all Kerotest products furnished for test pressures in **excess** of 2000 lb. per square inch. This high quality M.M. steel has been developed through many years of research and was adopted by Kerotest only after the most severe tests had proved it to be an outstanding steel to give maximum tensile strength, very high yield point and high ductility to withstand the most severe service and shock without fatigue.

For all test pressures of 2000 lbs. or less, Heat Treated Ilmenite Carbon Steel is regularly used.

KEROTEST



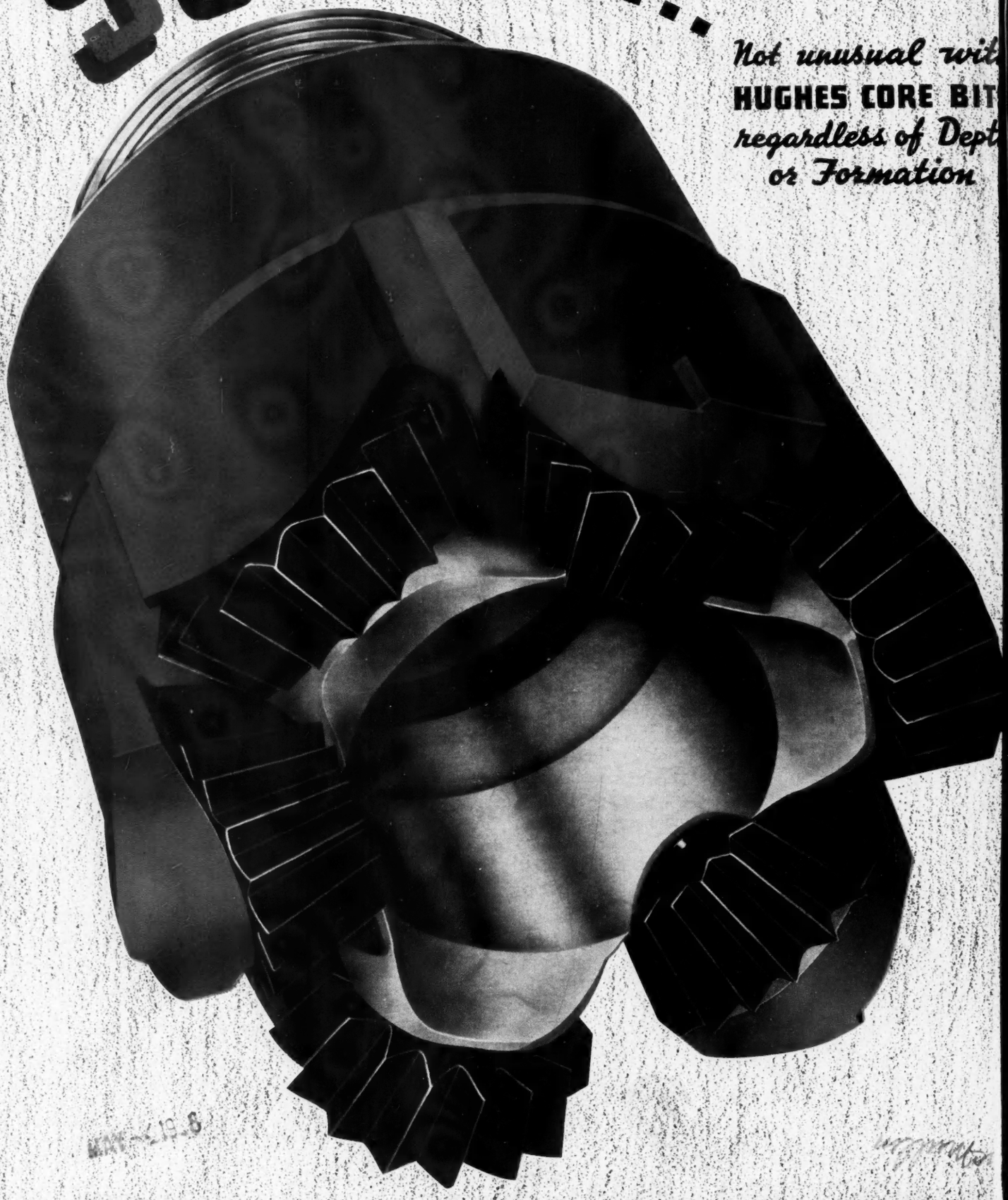
TYPE "M"
2000 lb. Test Pressure

TYPE "S"

KEROTEST MANUFACTURING CO.
PITTSBURGH, PENNSYLVANIA

98% CORE..

Not unusual wit
HUGHES CORE BIT
regardless of Dept
or Formation



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